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Western Montana.

DEER LODGE CITY, August 6th, 1871.

TO THE EDITOR—Sir: The DAKOTA is the best known quartz vein in the immediate vicinity of Bannack. It occurs about a mile below town, in the hill north of Grasshopper creek. It is, unfortunately, divided up into a great number of very small claims, of which Nos. 1 to 3 and Nos. 6 to 10 incl. have been worked the most. No. 6 is better opened, and has had more work done upon it, than all the rest, although the entire length of the claim is only 100 feet. It belongs now to W. C. HOPKINS alone, who has bought out his former partner. The claim was worked for several years previous to 1870, when, for the first time, it lay idle during almost the entire year. About eight weeks previous to my visit to the district, work was recommenced on the mine, and it has since kept the mill busy.

The vein being, as above stated, best exposed in Dakota No. 6, the following statements refer more particularly to that claim. The vein strikes nearly east and west. It lies between a granite dyke on the south and crystalline limestone on the north, and is, consequently, a contact-vein. The dip of the granite wall being quite irregular, sometimes to the south and more frequently to the north, that of the vein is also varying, and the first exploring shafts which followed the vein closely are therefore rather crooked. The width of the vein is also very variable, being from a few inches to 15 feet. The horses in the vein, which occur quite often in the larger portions of the vein, are always limestone, never granite. The great bulk of the ore is a very dark-colored quartzy brown iron ore, while around and in the limestone horses, down to a depth of over 200 feet, sheets and threads of green carbonate and soft black oxide of copper are always found. In a large bonanza, only lately discovered, quite near to the surface, these sheets of copper ores are quite thick, from half an inch to an inch, and they completely envelop the limestone boulders, which lie very loosely in the brown ore. The greatest depth reached on the whole vein is 310 feet, in a shaft on No. 6. A long tunnel, which exposes numerous cavities filled with beautiful crystals of calcspar, is also driven in this claim across the limestone into the vein, striking it at a point where it is at least 15 feet wide and 165 feet below the surface. For 20 or 25 feet before reaching the vein the limestone becomes quite brecciated and loose. From the bottom of this tunnel a shaft is sunk 145 feet deeper on the vein, which, for its entire depth, stands in a large mass of soft brown ore, showing free gold quite frequently. The existence of the large body of fine ore lately found quite near to the surface was unknown to the owner, both its extremities in the longitudinal direction being hidden by walls of dead matter, so that he had thought the whole intervening space was filled with the same. All the ore down to the depth now reached is very rich in oxide of iron, quartz being present in a much smaller proportion. No water has been reached in the shaft yet, and iron pyrites occur, therefore, only in small bunches on the lowest levels. But whenever the water level is arrived at, the pyrites will undoubtedly be found in the lode to be very solid, an occurrence which, so far, has in most gold veins not proved to be very favorable for the richness of the veins in depth, and which is, to say the least, a great impediment for the extraction of the gold by milling. The ore worked at the mill at present yields only $12 to $15 per ton, much gold being lost on account of imperfect machinery.

The WADHAM vein is located on the opposite bank of Grasshopper creek, high up towards the summit. It runs northeast and southwest, and dips northwest. The width of the paying portions of the lode is from 3 to 4 feet. The ore has a redder color than that from the Dakota, and contains from $200 to $240 per cord (of six tons). The mine has been opened to a depth of 125 feet, and the ore is worked in three arrastras, by Mr. WADHAM himself, and in the R. T. HOPKINS mill of five stamps. A good deal of the ore is slightly copper-stained.

The ST. PAUL is higher up on Grasshopper creek just opposite Bannack and on the same bank as the foregoing. The vein lies between syenite and talc-slate on the hanging, and quartzite on the foot-wall. Nearest to the vein on the hanging wall generally lies a two-foot band of syenite, which, however, thins out often and disappears, permitting a one-foot layer of talc-slate, which lies above it, to form the wall. The vein has a general northeast and southwest course, and dips first, near the surface, almost imperceptibly, but after a depth of 10 or 20 feet has been reached, very steeply towards the northwest. The first feature is undoubtedly the result of the erosion of a steep ravine, which runs along the vein and near to it, and which caused the upper softer portion of the vein to tip over into it, after the supporting rocks were mostly washed away. The vein, which is shown in the different prospecting tunnels and shafts to be from 3 to 6½ feet thick, is distinctly divided into two layers, which differ materially in appearance and composition. The upper layer, from 1 to 3½ feet thick, is an excellent highly ferruginous gold quartz, in which free gold is frequently visible; it is often quite soft for a considerable distance, but sometimes quite hard yet porous. The latter kind of ore shows quite as much free gold as the former. The lower layer, from 2 to 3 feet thick, is a whitish, red-spotted, decomposed material, which may have been syenite; but it always contains gold in the red spots, though it is not near as rich as the upper layer.

The claim of Mr. GEORGE BROWN, which is the only one worked, contains 350 feet. He has opened it by 6 or 8 tunnels and small shafts, in all of which the lode appears very regular as soon as the upper portion, which, as mentioned above, is tipped over towards the ravine, has been passed through. 600 tons of ore from this claim have been worked, the greater part in the New York and Montana Company's mill, and the remainder, by MR. BROWN himself in the N. E. WOOD mill, which he has lately rented. But he can only work three tons in 24 hours when the ore is soft, and does not extract more than half the assay value of the ore, which is reported to be from $24 to $28 per ton. The claim is excellently located for tunneling on the vein, as a depth of about 250 feet can be reached by starting in the bed of Grasshopper Creek.

The mills of Bannack are nearly all old and imperfect and sadly out of repair.

The N. E. WOOD mill, a Bullock crusher and grinder, is not at all fitted for working hard ores and even with soft ones has a very small capacity as above mentioned.

The WALTER C. HOPKINS mill, belonging to the owner of Dakota No. 6 has 12 stamps, and at the time of my visit the batteries leaked badly, so that one could not be kept in operation at all. Besides the stamps, there are two dolly-tubs and a settler in this mill. It is the only mill in the vicinity of Bannack, which is driven by steam.

The R. T. HOPKINS mill, a little 5 stamp affair, with an arrastra attached, is the only one which has been running very regularly of late years. It crushes ore from the Wadham, and is said to work nearly as close as Mr. WADHAM'S arrastras, which are lower down the creek.

The New York and Montana Company's mill of 24 stamps was idle and closed up at the time of my visit on account of litigation, so that I could not even get into the building, which has a solid and substantial appearance, quite in contrast to the shanties covering the other mills.

In the neighborhood of Bannack are 3 smelting works, or what appears to have been intended as such. Two of them, into which I had access, bear evidence that the builders had not the slightest ideas about metallurgical operations, the third was closed up. All of them are of course idle, there being no led ores in the vicinity, and even if these were present, such works could never be conducted profitably.

About two miles north of Bannack is the BLUE WING district, which contains silver ores in deposits in limestone. All of them are very narrow, the widest not exceeding 3 feet in width. But the ores, argentiferous, galenas and fahl-ores are very rich, assaying from $125 to $150 per ton. The Blue Wing and Bostwick's mines are worked to a small extent and the ores are sold to the smelting works at Argenta, which pay only $40 per ton to the owners of the mines. Only an inconsiderable depth has been reached so far and the deposits have proved to be what might be expected, very irregular, so that they can be relied upon neither for a large nor a regular supply of ore.

A. E.

Fire Brick Hot-Blast Stoves.

FROM the report of the proceedings of the English Iron and Steel Institute, published in *Engineering*, we take the following abstract of a highly interesting paper, by Mr. THOMAS WHITWELL. In another column will be found a report of the discussion on the subject of blast-furnaces which followed the reading of the papers, brief abstracts of two of which were given in our last issue.

Mr. WHITWELL commenced by stating that the present paper was a kind of supplement to that read before the Institute some time ago, wherein a description of the stoves as put up at the Consett Iron Works was given. The results submitted in this article are those of the continued working of the apparatus, extending, the one over a course of 2½, and the other

over 1½ years. In the previous communication, it had been stated that the stoves were applied to a furnace 55ft. in height, 20ft. bosh, 15ft. 6in. diameter below charging plate, and 8ft. hearth; that the average heat, as proved by Messrs. CHARLES COCHRANE and E. A. COWPER, was upwards of 1400° at the tuyeres; that the mineral charged consisted of one-third hematite, and two-thirds Cleveland, a mixture containing 48 per cent. of metallic iron; that the consumption of coke per ton of iron during the first year was 17 cwt. 3 qrs. (weekly make per furnace, 380 tons); that the quality was grey forge, and that the proportion of white iron was only two per cent. over the year. The author then referred to a series of papers communicated to the Institute by Mr. I. LOWTHIAN BELL, one of which treated of the results of the working of the furnaces at Consett, wherein he remarked that the increased heat supplied in the blast had been followed by an increased consumption of coke, and the analysis of the gases at the top of the furnace showing more carbonic acid, and less carbonic oxide. Mr. BELL deduced therefrom that the result must have been produced by the heat of the blast only. That gentleman suggested to the company that the heats should be reduced.

Mr. WHITWELL next referred to the relative sections of the blast furnace, working with the fire-brick stoves. No. 4 furnace was blown in during February, 1869, and the averages commenced six weeks after—viz., on April 10th. The pressure of blast at first was 2¾ lbs., and during the year was increased to 3 lbs. per inch, when the temperature was about 1400°, and the average consumption 17 cwt. 5 qrs. per ton of iron produced, the total make being 373 tons per week. During the latter half year the make rose to 401 tons per week, and the coke fell to 17 cwt. 2 qrs., the quality of iron being 84 per cent. No. 4 grey forge. During the next three months there was a little hanging, and some forge slag being put into this, the average make per week gave 383 tons, with 18 cwt 0 qrs. 3 lbs. coke used per ton of iron. The blowing power was then improved, a higher pressure of blast tried, and the furnace was put on the old burden of one-third hematite and two-thirds Cleveland. There was then noticed an increase in production. When, however, the pressure was raised 69 lbs. per square inch, or 40 per cent., the production showed a corresponding increase, but the stoves being already worked to their full power, were not able to develop the same temperature, and hence when the pressure of blast was raised to 4 lbs. at the beginning of the present year, the production of pig increased 45 per cent., but the consumption of coke with the decrease of temperature to 1200° had risen to 19 cwt. 2 qrs., which increase represents a money value of nearly 1s. 3d. per ton of iron, based on the price of coke in the Middlesbrough district. The out-put is now 510 tons per week, being 91 per cent. grey, 9 per cent. mottled, and a trace of white pig. The largest quantity turned out in one week was 587 tons.

The writer next referred to No. 5 furnace, which is different from the one above-mentioned in so far as though the same height, it is 22ft. 6in. diameter at the bosh, and 20ft. 6in. below the charging plate. Four fire-brick stoves, with an increase of 17 per cent. in heating surface were applied, and on first blowing in, the heats were 50 per cent. higher than in the case of No. 4, and more regular. About 1½ cwt. more coke was used when the blast was at 1400° and about 25 per cent. of white pig was made. This furnace has made all qualities of pig with a mixture of one-third hematite and two-thirds Cleveland, from No. 1 to white, but the production of white without any visible cause has continued. With the heat and pressure of the blast perfectly regular, the author thought that the production of pig iron should have been regular also, but such not being the case, he considered this question very minutely. He had traced the irregularity of yield to the charging, but other iron-masters had considered there was no fault to be found with that or the shape of the furnace. The make averaged 393 tons per week for the first three months, with coke 19 cwt. 2 qrs. 8 lbs. per ton. Early in the current year the temperature was reduced to 1250°, as advised by Mr. LOWTHIAN BELL, so as to compare with No. 4 on equal temperatures, but the coke went up to 21 cwt. 2 qrs., being an increase of 2 cwt. for 200° of temperature. The irregularity continued, and the nozzles were enlarged to 84 square inches of area, but without remedying the defect; in fact, the production is 60 tons per week less than No. 4, and that at an increase of 2 cwt. of coke per ton of iron turned out. The Consett Company are about to reduce the diameter of the upper part to that of No. 4, as the present dimensions, though they suit an 80-ft. furnace, will not do for a 55-ft. one, with the mixture named. The writer thinks that in the case of No. 5 the coke and larger pieces of the charge roll to the centre, the small mine and ore remaining near the periphery of the furnace, the blast forces its way up the line of least resistance, viz., the centre.

The Consett Company decided to apply the stove to two new blast furnaces, the size adopted being the mean between 4 and 5, viz., 21 ft. bosh, angle 72°, size under bell 18ft. 6in., diameter of bell 11ft., with a view of arriving at the maximum economy by experiment. One of these furnaces has been in blast about two months, and so far the consumption of coke promises to be the mean between the quantity used in 4 and 5.

The author attributes the successful working of No. 4 to the action of the brick-work in the stoves, which form in actual practice large reservoirs of caloric at a temperature of 1400°, this heat being given off when a stand takes place at tapping time, a "tuyering" or a "scaffold," when in all cast-iron plant, no gas being produced, the stoves are being cooled down, an effect prejudicial to the working of the furnace. The fire-brick stoves being always bright red, throw the blast hot into the furnace when it is most needed. These stoves differ from the Siemens system, where all the air is admitted at one point, and where a heat for a short time of 1800° has been obtained, in so far as the heated air is admitted among the gas at several points. In conclusion, the writer gave the following as his deductions from the above results: 1. That the increase in production in the furnace No. 4 at Consett is directly in proportion to the increase in the amount of blast thrown into the furnace and not consequent on the reduction of temperature. 2. That other things, such as the action of materials in the charging and form of furnace being equal, regularity of quality in the iron is in no degree incompatible with a high degree of temperature in the blast. 3. That in the two furnaces at Consett, although there is a great difference in the internal form and capacity, yet no reduction of temperature of the blast has been attended with economy, but that in both cases a reduction of 200° in its temperature has been accompanied by an increase of upwards of 2 cwt. in the consumption of coke per ton of pig iron produced.

The Possible Depth of Working Coal Mines.

THE Report of the English Royal Commission, appointed to inquire into the status of the coal industry, has been printed, and from extracts published in the *Colliery Guardian*, we judge that the report must be exceedingly valuable. We regret that our space will only admit of our giving extracts of the report, though we think that the annexed abstract gives all the general deductions made from numerous observations, some of which, together with many names, etc., we omit. Many of the conclusions, embodied in the report, though they may not be fully supported by observed facts in this country, will doubtless give valuable suggestions to those who would investigate the wealth of this country in coal.

The estimated quantity of coal in known coal-fields is 97,528,126,210 tons, and this quantity is divided into two parts, viz., that lying at depths not exceeding 4,000 feet, and amounting to 90,207,285,398 tons, and that lying at a greater depth than 4,000 feet, amounting to 7,320,840,722 tons. The line is drawn at 4,000 feet, because, after a careful investigation of the subject, by a well-qualified Committee of the Commissioners, the conclusion has been arrived at that 4,000 feet is the limit, beyond which, so far as present appliances and possible future expedients are concerned, it is not likely that coal will ever be won and worked. The reasons upon which this conclusion is based are fully given in the Report of the Commissioners, and the matter is very interesting and important. The information and evidence obtained leads to the conclusion that the depth to which coal mines may hereafter extend depends upon human endurance of high temperatures, and upon the possibility of reducing the temperature of the air in contact with the heated strata. The possible depth from which coal can be worked does not appear to be limited by any consideration of a mechanical nature. The cost of the steam power required for hoisting coal from an unusual depth will not be sufficiently large to be regarded as an obstacle to deep working, and the expense per yard of sinking does not greatly increase with increase of depth. The introduction of steel wire ropes, tapering downwards, renders it practicable to draw coal from an extreme depth, without overstraining the rope by its own weight; and it is also quite practicable to draw, in successive stages, by engines placed in the shaft. As regards pumping, it seems to be an established fact, so far, at least, as experience has yet gone, that water is seldom, if ever, met with in large quantities, at great depths, in the British coal fields. As a rule, deep mines appear to be not more liable to inflammable gas than shallow mines, so that no impediment to deep working is to be apprehended, in regard to increased liability to explosion. The increase of temperature which accompanies increase of depth is the only cause which it is necessary to consider as limiting the depth at which it may be practicable to work coal. In England, the temperature of the earth is constant at a depth of about 50 feet, and at that depth the temperature is 50° Fahr. The rate of increase of the temperature of the strata in the coal districts of England is, in general, about 1° Fahr. for every 60 feet of depth. In some instances, the increase is very irregular, being probably affected by local conditions, such as percolation of warm or cold water, and varying conductive power of the rocks penetrated. These cases, however, are exceptional, and throw no doubt upon the general conclusion that the rate of increase amounts, as a rule, to about 1° Fahr. for every 60 feet.

Mr. DICKINSON communicated to the Committee a series of thermometrical observations made by Mr. BRYHAM during the sinking of Rose Bridge Colliery, and expressed an opinion that, from the circumstances under which these observations were made, they are more to be relied upon than others given in evidence. According to these observations, the increase of temperature averages 1° Fahr. for every 55 feet in depth; and it may be pointed out that Mr. DICKINSON's opinion in favor of this rate of increase is supported by that of Mr. ATKINSON, who found that the average of his observations gave almost exactly the same rate of increase as that deduced by Mr. DICKINSON from the temperatures taken by Mr. BRYHAM. The Committee, however, still hold to the estimate of 1° for 60 feet. As the present inquiry applies only to English coal fields, it is immaterial to inquire whether the same rule holds good for other places. It may, however, be observed, in passing, that wherever artesian wells have been sunk in this or other countries, the rate of increase is in close harmony with that observed in English coal mines; but, on the other hand, by observations made in Belgian coal mines, the rate of increase appears to be less than in English colleries, though it is quite possible that this apparent difference may have arisen from the thermometer having been applied in a man-

ner which would not correctly indicate the temperature of the strata. In the metalliferous mines of Cornwall, the deviations from the scale of 1° Fahr. for every 60 feet are very great, but it is probable that the disturbing causes of variable conduction, and percolation of heated water exist to a much greater extent in the geological formations containing metalliferous veins than in the sedimentary rocks embracing the coal measures. The deepest colliery in England is at Rose Bridge, near Wigan, where the shaft has already attained a depth of 2,376 feet, and is still being sunk to a greater depth. The temperatures of the rock, as observed in this shaft, are in general agreement with the ordinary rate of increase to a depth of 1800 feet. After that, the increase becomes considerably more rapid; but it would be rash to conclude from this single example that the increase would, in all cases, be accelerated, when that depth was exceeded. At the lowest point of this shaft, the temperature of the earth, as indicated by a thermometer placed in a bore-hole a yard in depth, is 92° Fahr. According to the evidence of Mr. ELLIOT, and his assistant, Mr. WILMER, the temperature of the strata in horizontal coal workings accords with the rise and fall of the surface above; but there is reason to believe that this rule will only apply to gradual variations of surface, and not to abrupt prominences, in the nature of peaks, since in the Mont Cenis tunnel the temperature of the rock is very much less than would be due to the depth measured from the top of the mountain. It may, however, be assumed that, under the ordinary configuration of the surface in British coal fields, the increase of temperature will have reference to the depth from the surface of the ground, and not from the level of the sea.

[To be continued.]

Blast Furnaces.

THE following discussion of topics relating to blast-furnace economy is taken from a report of the proceedings of the English Iron and Steel Institute. The gentlemen who took part in the discussion are mostly well known, by reputation at least, in this country, and it has long been the opinion of those familiar with the transactions of the Institute that the discussions which follow the reading of papers are frequently more valuable than the papers themselves:

The CHAIRMAN said that the business was one in which he hoped they would join heartily. They would commence by the discussion of the blast-furnace papers, read on the previous day.

Mr. FOTHERGILL, M. P., said that yesterday they had had a very admirable paper read by Mr. WHITWELL on the importance of his principle of heating blast. The special credit he took was, that his mode had a very great gain derived from the blast, which could be attained without the destruction of the pipes in the ordinary stoves. Mr. BELL, he was informed, recommended a reduction rather than an increase in the temperature of the blast. The gain claimed, he, personally, was inclined to attribute to the increase of blast driven into the furnaces. He knew no greater authority on this question than Mr. BELL, and he should be glad to hear that gentleman's opinion upon this subject. He had opened his store of knowledge to them with great liberality; and he should be glad on this point, also, to hear his opinion.

Mr. WILLIAMS said it appeared to him that, concerning the question of economy in fuel, there was a good deal of mistake. If they wanted to ascertain whether their furnaces were working economically or not, they must catch the gases and examine them, and by this principle the relative economy of a furnace of any kind whatever would be readily discovered. Another question he should like to refer to. He thought authorities in blast furnace work ascribed to a wrong cause the economy of fuel in the Cleveland furnaces. That economy was ascribed to increased capacity, and he should like to ask whether it would not be nearer the truth to attribute it to the increased height rather than the increase of the capacity alone, and independent of height.

Mr. BELL said, after the direct appeal made to him by Mr. FOTHERGILL, it was impossible to shrink from taking part in the discussion, though on the subject of the application of high heats to the smelting of iron he feared that some of his colleagues would begin to vote him, he was almost going to say, "a bore." ("No, no.") There was no doubt the question was of the utmost importance, because it all tended to the great question of the day—the economy of fuel in blast furnaces. Looking at some of the radical changes which were submitted to them, it became necessary to approach the question in as philosophical a spirit as it was possible to do. He would just make one or two observations in regard to what fell from Mr. JONES, Mr. FOTHERGILL, and Mr. WILLIAMS. He was inclined to think that the question of the great enlargement of blast furnaces was retarded for some time by the want of correct information on the subject. He was not at all inclined to agree with Mr. GJERS, that the results obtained by the gradual enlargement of the furnaces were at first of such a satisfactory character as to induce anyone to undertake the erection of an enlarged one. The first furnaces he built were about 4,000 or 5,000 feet in capacity; and then they got up to 6,000 feet. Mr. VAUGHAN built one at Witton Park somewhat larger; and then he built one 55 feet high. The question to consider was, whether or not the result from the Witton Park furnace had been so favorable as to justify the advance he had spoken of. He failed to see that much good resulted from the change. It was only when they doubled the size of the furnace that they succeeded in economizing the quantity of coke, which was now familiar to all the members of the Institute. He was also inclined to agree with Mr. WILLIAMS with regard to what he said about the height of the furnace. There was no doubt that a portion of ironstone submitted to the action of the blast would experience precisely the same change in descending through a column 10 feet high, whether that column formed a very high or a very low surface, provided the ironstone was in contact with the reducing agencies in the blast furnace. But the difficulty was, that in a very low furnace it was impossible to maintain the necessary condition of things, since, if they got a furnace with a greater diameter than experience had found desirable, one part of the ironstone went down more quickly than another, and the furnace was thus reduced to the level of one of low capacity. This was the only reason why the blast furnace should have sufficient height to prevent the mechanical arrangement of the contents which he had described. Mr. WILLIAMS had described, in a very few words, how a blast furnace could be tested as to its working. The efficiency of the furnace consisted in its power of saturating an ascending column of carbonic acid with oxygen, and of robbing the ascending column of its sensible heat. If one were to talk for twelve months, the matter could not be put more clearly or concisely. The power of saturation of this ascending column with oxygen was that which was defined by chemists to be its limit, and if this was without variation there would be no dispute amongst them. But, unfortunately for the iron trade, and unfortunately for that meeting, they could not command this power, and as soon as the reducing column of gas had absorbed a certain quantity of oxygen, at that moment all further action ceased. Therefore, what was necessary to be done was for some one to undertake an examination of the inequalities and nature of that action, in order to ascertain where the difference ceased between the ascending column of gas and the iron they were seeking to reduce. There was one sentence in the paper of his friend, Mr. WHITWELL, from which he begged most respectfully to dissent. Mr. WHITWELL had endeavored to separate him from gentlemen of a purely practical turn of mind. He should be very sorry if Mr. WHITWELL was going to measure his practical science with his scientific acquirements. His object had always been to be a practical man; and, though he made no complaint against Mr. WHITWELL on personal grounds, he must protest against his view, because it seemed to him to be a violation of the principles laid down at the establishment of that Institute, namely, that one of their objects should be to enlighten practice by science, and to guide science by practice. The heat of a blast furnace was derived from three sources. There was, first, the conversion of fuel into carbonic acid; secondly, the heat thrown in by the blast; and, thirdly, the large amount of heat—nearly 40 per cent.—due to the reducing action itself, and the conversion of carbonic oxide into carbonic acid. When he examined the heat evolved by the blast furnaces at Clarence Works, he found that in each thousand of the total number of units of heat 482 were from carbonic oxide, 138 from blast, and 390 from the conversion of carbonic oxide into carbonic acid. In one of the furnaces at Consett, he found that there were per thousand 489 units of heat from carbonic oxide, 158 from blast, and the remainder 352 from the conversion of carbonic oxide. He did not consider that blast furnace the most favorable one for their work. It was obviously their aim to get as much heat as possible from the generation of carbonic acid, and he thought it was clear that that furnace was getting a smaller quantity than it ought. Mr. WHITWELL rendered very great services to the owners of the Consett furnaces by supplementing what was an organic defect in the working of their minerals. He told his friend that it was a most interesting experiment; that they should enlarge the size of their furnaces and increase the temperature of the blast; but that in his (Mr. BELL'S) humble judgment they would find no advantage, and might probably find the reverse. He was sorry for their sakes to say that his words proved true. In conclusion, Mr. BELL stated that at one time he was sceptical about the benefits of Mr. FERNIE'S furnace; but, as the best thing one could do when one was wrong was to say so, he now begged to say that Mr. FERNIE was entitled to all he claimed for his invention.

Mr. WHITWELL explained that the furnaces of Consett were built to smelt hæmatite pure, and not to smelt Cleveland and hæmatite with the best possible advantage. Owing to changes of management and other things, the material smelted at one time was no longer smelted, but a mixture of Cleveland and hæmatite had been adopted. Therefore, he did not say that they were the best possible kind of furnaces for the reduction of that kind of ore. He regretted that Mr. BELL had thought the remarks he made in his paper were of a personal character—(Mr. BELL: No, no)—but they were not so intended. So far as any deduction could be made from returns, he was obliged to go entirely contrary to the remarks made by Mr. BELL. The comparison between the Clarence furnace 80 feet high smelting Cleveland ore, and the furnace at Consett, for which it was not constructed, could not in fairness be made.

At the request of Mr. BELL, the result of his personal experience was given by Mr. RAMSAY, of Middlesbrough. The question of hot air, he said, had occupied his attention for a considerable time. He was at the erection of the furnaces at Jarrow, blew them in and managed them. They were then the largest furnaces in the district, and he remembered that they succeeded in making 300 tons a week out of one furnace. The plant was put up by Mr. SLOTE to make no more than 180 tons per week. They tried the effect of hot blast. He put four of SLOTE'S running engines to one furnace, and he succeeded in blowing a pillow of blast 5¼ lbs. We were told that there was a danger of blowing the whole bosh out and the whole concern into the air. They succeeded in making No. 1 iron for two months running. The result had continued, and he had always continued to get plenty of blast. They had not succeeded in getting a high heat, but their "belly-pipes" were always hot, and they made No. 4 forge

iron regularly with 21 per cent. of coke. He was told by Mr. WHITWELL that if they had more draught in their stoves they would get greater heats and better results. This, in the course of two or three months, Mr. WHITWELL would have an opportunity of solving; but so long as they could make forge iron with 21 per cent. of coke in the Cleveland district, they had nothing to complain of. Whether their heats were 1,400 or 1,100, so long as they could keep their "belly-pipes," red hot, as their manager inquired, "What more do you want?"

Mr. BAGNALL, also addressed the meeting upon the subject of the yield of furnaces. He said that at works he represented they were dissenters from those in other Cleveland districts, inasmuch as their furnaces were oftener tapped. They took off their gas on the plan of Mr. ADDENBROOK, and they found gas enough to meet all their requirements. With regard to the question of heats he was an anxious inquirer. At present they had a circular which was generally condemned, and they did not get a temperature of much more than 900 degrees. They generally found that the temperature varied 100 degrees in the course of the week, which he thought was considerably too much. The ironstone they used was very lean. It did not average more than 27½ per cent. of iron in the raw state. They added to that a similar quantity of forged cinder, which increased their make, and he hoped did not deteriorate the quality. They had wide and narrow-throated furnaces. When they blew in the wide-throated furnace, they had bad results from it for a long time. They had nothing from it but hard iron; but by a proper distribution of the material from the top, they had a good result from that furnace. In the other furnace they had no difficulty, for it needed not to be levelled. In conclusion, he would say that he perfectly agreed with Mr. WHITWELL as to the great necessity of charging the materials properly at the top of the furnaces.

This closed the discussion.

The Mines of the Hickory Coal Company.

WE are indebted to Messers. P. W. and W. S. SHEAFER for a description of the workings, more particularly the new shaft, 222 yards in depth, to develop and work the Mammoth coal-bed. This bed is remarkable for the great purity of the coal which it contains, as well as its great thickness, which averages thirty feet. Our space permits us to give only an abstract of the account furnished.

The old workings consist of a slope, on an angle of 19½ degrees, 400 yards in length connecting with a main gang-way 9,600 feet long, commanding an area of 130 acres of coal. These operations together with those on what is called the 7 foot seam, averaging 10 ft. thick and lying about 15 or 20 feet above the Mammoth, have yielded during the past nineteen years a yearly average of 84,576 tons, and a total of 1,606,955 tons. The waste is however very great, nearly one-half of the whole amount of coal in the bed.

To avoid this older and catacombed part of the mines, this enterprising company were induced to open into a larger body of coal, one mile to the south-east, by means of their Wadesville shaft, 666 feet deep, to the Mammoth bed. The selection of this point was made after very careful survey, for several substantial reasons. *First*—To secure a very large body of good coal at a reasonable depth, partially opened by the slope already mentioned, *Second*—Locating it on the E. Norwegian Branch Railroad, places it but two miles from the head of the Reading Railroad at Pottsville, and the nearest to tide-water at Philadelphia of any of the 152 collieries shipping over the Reading Railroad, or the Schuylkill Navigation in 1866. We dwell a moment to consider this point. The Railroad and Canal terminate near Pottsville, on the southern edge of the southern coal field, about midway of its termini, the one, thirty miles east, on the Lehigh river, at Mauch Chunk, and the other about thirty miles to the west, near Dauphin, on the Susquehanna river. From the head of the railroad, ninety-four miles, and from the head of the Canal, one hundred and eight miles, tide-water, branch railroads ramify and reach like ten fingers from the end of two long and strong arms gathering in the fossil harvests of past ages. The product in 1866 from 152 collieries, was nearly 4,500,000 tons. Fifty-three of these collieries lie in the Mahanoy Region, north of Pottsville, from 8 to 20 miles distant, and produced 2,500,000 tons. The ballance 2,000,000 tons, came from 99 collieries south of the Broad Mountain, and varied in distance from 2 to 12 miles from the head of the road. Of all these 152 collieries, the above shaft is the nearest to market.

The site of the shaft was carefully chosen with reference to the geological structure of the district, and is exceedingly important, being on the long and gentle slope of the great Mine Hill anticlinal axis, which enables us to reach the Mammoth bed with a practical depth, and obtain a working length limited only by land boundaries or leases. This shaft commands a working length of coal, miles in extent, but is at present limited by a lease, eastward 500 yards, and westward 900 yards, or 1,400 yards in all, and a breadth of 667 yards, north and above the water drainage at the foot of the shaft. This length multiplied by the breadth and again by the great thickness of the Mammoth Vein—10 yards—gives a cubic quantity equal to 6,000,000 cubic yards or tons, to which we add the seven foot bed, averaging three yards in thickness, and the four foot bed overlying the second foot, averaging 1½ yards equal to 2,701,350, gives a total quantity of 8,704,350 tons, and of the immense quantity the ton furthest removed from the foot of the shaft is 1,350 yards, and as this ton of coal is passing to the shaft, its route is over a self-acting plane of 470 yards in length, the haul by mule-power will be but 880 yards, a matter of the greatest moment in the cheap production of coal. This central position of the shaft does away with the long and tedious hauls and the expensive gangways now so common in slopes and drift workings.

With reference to the details of the shaft itself, work began upon it in Sept. 7, 1864. The surface covering was removed making an excavation 22+30 feet, and 40 feet deep to the first stratum of solid rock; using it as a foundation, a wall 4 feet in thickness and 14+22 feet inside of inclosure was carried up to the surface, and of this size the shaft was sunk. The severe winter weather delayed the masonry, and, consequently, the sinking until June 12, 1865; 12 days were lost in making sumpt in the Orchard Vein, 115 feet from surface, also 18 days in making sumpt in Primrose Vein, 320 feet from surface, again 15 days in lowering pump from one sumpt to another, 12 days we were drowned out, 18 days men turned out, 6 days adjusting pump. Then from 19th October, 1866, to 26th February, 1867, and 12 days in May and June, 1867. Making a total delay from June 12, 1865, of 203 working days. The Mammoth Vein was cut June 18, 1867, 2 years and 6 days, or 631 working days from June 12, 1865; deduct time lost, 203 days, and there remains 428 days spent in sinking from bottom of foundation walls to top of Mammoth Vein, a distance of 623 feet, or 1 45-100 feet per day. The shaft is divided into three compartments of 6+12 feet, by 12 inch timbers placed about 4 feet apart. from top to bottom.

The surface water is caught by drains cut around the shaft, and by them is conducted into the sumpt in the Primrose Vein, from whence it is hoisted three hundred and twenty feet by an eight-inch pump to the surface. Below the Primrose there is so little water that a pump is not at present necessary to collect the small quantity made at the bottom of the shaft, but is hoisted by buckets, and is not over sixty gallons per day. During the sinking of the shaft no artificial means of ventilation were used, nor is there now, although the gangway is two hundred feet west, from the foot. Ordinarily in sinking a well sixty feet deep ventilation is difficult, but at this shaft a simple contrivance and a partition in the shaft so creates a draugh tthat pure air is abundant at the face of the gangway, and everywhere through the workings.

In order to show the comparative economy of the working of coal in this country and England, a statement of the depth and capacity per day of several English mines is introduced; but it seems to us that the English data are scarcely handled fairly. For example, they say, in speaking of a certain English shaft, 686 yards deep:

Much difficulty was experienced from meeting with springs of water. For 29 months the progress of the sinking was but 17 feet per month.

The general diameter was 12 feet, at the centre 12½, to allow for passing, and at the bottom it was enlarged to 19 feet 2 inches. It is tubed with cast iron segments for a distance of 42 yards, then lined with a 9-inch wall of arch bricks, stiffened at intervals with stone rings, 18 inches on the bed and 12 inches thick, of which there are 80; altogether, 7,308 cubic feet of stone and 750,000 bricks have been used in the shaft, exclusive of those used in the mouthings. The total cost was $500,000, and developed 32 yards of coal in 26 seams of more than a foot in thickness, 15 of which have an aggregate thickness of 58½ feet. This enterprise was successfully completed by winning the "Black Mine," a fine seam of coal 4 feet 8½ inches thick, and calculated to last 30 years, at 500 tons per day. We may infer, therefore, that the grand object of this immense undertaking was to develop the "Black Mine" coal, 4 feet 8½ inches thick.

We fail to see the force of this logic. A five-foot coal bed may be valuable enough in England to sink a considerable distance after reaching the lowest of the other "15 seams which have an aggregate thickness of 58½ feet," but we cannot see why it is fair to suppose that the entire undertaking was to develop this seam. If so, what is to become of the other 14 seams? If they had known of the existence of another 5-foot bed, a short distance below the "Black Mine," perhaps it would have been worth "going for" too, and if it had turned out to be "a fine seam of coal" 5 feet in thickness, would it be fair to suppose that it was "the grand object of this undertaking"?

THE HICKORY SHAFT

develops but ten seams of coal, as follows:

1.	The Coal,	at	40	feet deep,	1 foot thick.
2.	The Coal,	at	94	"	4 "
3.	The Orchard,	at	115	"	6 "
4.	The Coal,	at	313	"	1 "
5.	The Primrose,	at	320	"	10 "
6.	The Holmes,	at	402	"	4 "
7.	The Rough Vein,	at	490	"	4 "
8.	The 4-ft. seam,	at	627	"	6 "
9.	The 7-ft. seam,	at	639	"	10 "
10.	The Mammoth,	at	669	"	30 "
					76 feet.

The object, however, was to win the Mammoth and seven-feet coals, together 40 feet thick, and all the most productive and reliable beds of the anthracite regions; they, at the depth of 222 yards, or less than one-third that of the "Black Mine," can certainly send to the surface double the estimated quantity of the latter, or 1000 tons per day. We then shall assume 500 tons per day for 300 days, or 150,000 tons per annum for the English mine, and 300,000 tons per annum for the American mine. To pay the interest on the English investment, say 6 per cent. on $500,000, would impose a tax of 20 cents per ton on the product of the mine, exclusive of the interest on the original cost of the land. The cost of the American pit was $147 50 per linear foot of depth, making for the 666 feet, including cost of temporary hoisting engine, $98,231 10; cost of permanent, hoisting and pumping engines, and other outside improvements, $50'000; total cost, $148,231 10. The interest on this cost of say $150,000, or $9,000, is equal to a tax of three cents per ton, on the yearly product of the mine.

If we thus contrast the comparatively small amount of Peunsylvania anthracite, its easy and cheap development and production, and its convenient access to the seaboard, we must be impressed with its great importance and consequent value.

THE COAL TRADE.

B. R. WESTERN, COAL EDITOR.

Anthracite Coals.

NEW YORK, Sept. 22, 1871.

WHOLESALE.—The damand remains good, and is in fact ahead of the supply. Lehigh coals are particularly scarce, as high as 50 cents per ton above Circular prices being offered. Most of the shippers of Lehigh coal are sold ahead, and there is much complaint at the scarcity of this coal. The advance in prices has extended to other grades of good coals, and Wilkesbarre is also quoted at considerable advance over Circular rates. The Pennsylvania Coal Company quote for Pittston coal *to contractors*, for October delivery, twenty cents advance on all sizes except Stove, which is thirty cents, viz.: Lump, $5 10; Steamer, $5 10; Broken, $5 30; Egg, $5 40; Stove, $5 80; Chestnut, $5 10. Considering there was an average advance of 15c. per ton at the last auction sale, and a further advance in the market during the month of fifty cents per ton, we hardly know how to explain this small advance. Mr. HOYT, however, understands his business. The ninety-fourth Scranton auction sale for September is announced in our advertising columns this week. 130,000 tons are offered. This is 10,000 less than the amount offered last month, and 20,000 less than was actually sold at the last sale. It takes no genius to predict an advance of about twenty-five cents per ton at this sale. A greater advance might be expected were not the Company so tardy in delivering the coal sold at previous sales. We understand that they are some 30,000 tons behind hand on Stove size alone, and vessels going there after coal have to wait in some instances a week or ten days. The sale will take place on Wednesday next, September 27th, at 26 Exchange Place, at 12 o'clock (noon). There will, no doubt, be a large attendance.

FREIGHTS.—In consequence of the delay at the Scranton Docks, freights have advanced considerably, as high as 80 cents having been paid from Elizabethport to New York. Eastern freights have also advanced, except to Boston. We quote New Haven, $1 15; Bridgeport, $1 10; Providence, $1 40; Boston, $1 75.

RETAIL.—There has been an excellent business doing in Compaay coals at from $6 50 to $7 50, delivered. Lehigh, $7 50 to $8 50.

BITUMINOUS COALS.—We have no change to note in this branch of the trade this week. Steamers and large manufactories continue to use large quantities of these coals.

Anthracite Coal Trade for 1870 and 1871.

The following table exhibits the quantity of Anthracite Coal passing over the following routes of transportation for the week ending Sept. 16, 1871, compared with week ending Sept. 17, 1870.

COMPANIES.	1870. WEEK.	1870. TOTAL.	1871. WEEK.	1871. TOTAL.
*Phila & Reading R.R.	97,591	1,963,699	105 470	2,609,540
Schuylkill Canal	25,573	261,000	33,808	681,138
Lehigh Valley R. R.	55,605	2,236,943	72,432	1,460,327
Lehigh & Sus. R. R.....	20,663	697.524	29,973	820,084
Lehigh Canal	28,685	478.195	33,187	413,172
Scranton North.....	17,187	542.657	19,907	316 232
" South	33.334	1,244.009	43,515	706.652
Penn. Coal Co., rail....	22,612	809,786	24,441	436.851
" " " canal..	....	13,966	838	9,265
Del. & Hud. Canal Co..	....	1,100,193	33,963	615,715
" " East.....	9,113	269 377	9.736	208,399
" " West	1,771	60,722	4,436	69,238
South.....	11,205	334,484	10,027	197,413
Shamokin.....	13,070	329,852	10,705	452,243
Trevorton.....	1,867	65.479	....	....
Lykens Valley Coal Co..	2,723	39,781	2,166	65,613
Wyoming South.....	....	199,419	....	....
Wyoming North.....	....	....	....	4,167
P. N. Y. C. & R. R. Co.	5,789	214,571	....	104,987
Williamstown Col'y....	6,347	210,916	....	....
Big Lick Col...	3,028	57,949	3,802	103,410
Total.....	356,253	11.126.552	438,406	9,283,416
1870.....		9,283,416	356,253	
Decrease.....		1,843,136		
Increase.....			82,153	

* Less coal transported for Co's use and Bituminous coal.

Bituminous Coal Trade, 1870 and 1871.

The following table exhibits the quantity of Bituminous Coal passing over the following routes of Transportation for the week ending Sept. 16, 1871, compared with week ending Sept. 17, 1870.

COMPANIES.	1870. Week.	1870. Year.	1871. Week.	1871. Year.
B. & O. Canal.....	13,541	378,308	14,507	480,882
C. & O. R. R.....	19,339	592,901	24,627	879,559
H. & B. T. R. R.....	6.554	218.852	3,796	230,937
Harrisburg & D.....	19,770	552,460	13,634	567,439
*L. V. R. R.....	....	9,899	8.545	284,790
P. & N.Y.C. & R. Co.....	5,855	181,213	....	....
Cumberl'd Branch Canal	1,776	66 636	5,610	141,957
" " Railroad....	4,222	79,017	1,914	51,679
Total.....	68,057	2,079,286	72,633	2,637,213
			68,057	2,079,286
Increase.			4.576	557,967

The tonnage of the P. & N. Y. C & R. R. Co. is included in that of the L. V. R.R. Co.

Philadelphia & Reading Railroad and Branches.

COAL TONNAGE

For the Week ending Saturday, September 16, 1871.

BY RAILROAD.—ANTHRACITE.

PASSING OVER MAIN LINE AND LEB. VAL. BRANCH.

	Tons.	Cwt
From St. Clair.	34.155	07
" Port Carbon.	7,676	19
" Pottsville.	1,300	18
" Schuylkill Haven.	34.8 5	15
" Pine Grove.	5,689	08
" Tamaqua.	19,071	19
" Harrisburg.		
" Dauphin.	5,754	14
Total	108,505	00

FOR SHIPMENT BY CANAL.

Passing Frackville Scales	7,575	01
" Mill Creek "	2,203	05
" Schuylkill Valley Scales	1,567	16
" Mt. Carbon "	2,831	06
" Cressona "	15,477	01
" Pine Grove "		
" Tamaqua "	2,574	04
Total	32,048	13

SHIPPED WESTWARD VIA NORTHERN CENTRAL RAILROAD.

Passing Locust Gap.	1,588	06
" Shamokin.	3,221	08
" Herndon.		
Total	4,809	14

SHIPPED WEST OR SOUTH FROM PINE GROVE.

Via Schuylkill & Susquehanna R. R.	1,193	16
" Lebanon & Pine Grove Branch	1,323	17
Total	2,517	13

CONSUMED ON LATERALS.

From Frackville Scales.	627	00
" Mill Creek "	600	19
" Schuylkill Valley Scales.	293	11
" Mt. Carbon "	564	14
" Cressona "	311	10
" Pine Grove "	71	12
" Tamaqua "	294	14
Total	2,684	00

LEHIGH AND WYOMING COAL.

Received via Allentown, E. Penn'a Br.	96	11
" " Alburtis, " "	30	05
" " Oreland, G. & N. Br.	1,109	19
" " Connecting R. R.		
" " Willow Street R. R.	215	16
Total	1,452	11

BITUMINOUS.

From Harrisburg.	7,879	16
" Connecting R. R., G. & N. Br.		
" Junction R. R.	208	18
Total	8,088	14

COAL FOR COMPANY'S USE.

Anthracite	2,723	01
Bituminous	165	11
Total.	2,888	12

RECAPITULATION.

	Total for Week.	Corresponding week last Year.	
Passing over Main Line and Leb. Val. Branch	108,505 00	102,477 15	i 6,027 85
For Shipment by Canal	32,048 13	24,121 14	i 7,926 19
Shipped Westward via Northern Central R. R.	4,809 14	6.743 04	d 1,933 10
Shipped West or South from Pine Grove	2,517 13	1,368 16	i 1,148 17
Consumed on Laterals	2,684 00	2,543 15	i 140 05
Lehigh and Wyoming Coal	1,452 11	90 15	i 1,361 16
Total Anthracite paying fr'gt	154.017 11	137,345 19	i 14,671 12
Bituminous	a 8,088 14	9,224 08	d 1,135 14
Total of all kinds paying fr'gt	160,106 05	146,570 07	i 13,535 18
Coal for Company's use	2,888 12	2,413 14	i 474 18
Total Tonnage for Week	162,994 17	148,984 01	i 14,010 16
Since Dec. 1, 1870	4,101202 08	2937591 02	i1163611 06
Total to date	4,264197 05	3086575 03	i1177622 02

SHIPPED BY CANAL.

	Total for Week.	Corresponding week last Year.	
From Schuylkill Haven	31,104 15	26,070 10	i 5,034 05
" Port Clinton	2,703 00	1,988 00	i 715 00
Total Tonnage per Week	33,807 15	28 058 10	i 5,749 05
Since Dec. 1, 1870	647,329 17	238,874 06	i408455 11
Total to date	681,137 12	266,932 16	i 414204 16

Philadelphia and Reading R. R.

Amount of coal transported on the Philadelphia and Reading Railroad during the week ending Saturday, Sept 16, 1871:

	tons.	cwt
From St. Clair	34,155	07
" Port Carbon	7,676	19
" Pottsville	1,300	18
" Schuylkill Haven	34,855	15
" Auburn	8,282	08
" Port Clinton	19,071	14
" Allentown and Alburtis	126	16
" Harrisburgh and Dauphin	13.634	10
Total paying freight	119,104	07
Coal for Company's use	2,888	12
Total for week	121,992	19
Previously this year	3,098,393	18
Total	3,220.386	17
To same time last year	2,559,418	18

Pennsylvania Coal Company.

Shipments of Pittston Coal for the week ending Sept. 16, 1871.

	1871. WEEK.	1871. YEAR.	1870. WEEK.	1870. YEAR.
By Railway	24.441 03	436,851 04	22,612 00	809.786 03
" Canal	837 18	9,265 02		13,996 08
Total	25 279 01	446,116 06		823,782 11
Decrease 1871, 377,666 05				

Schuylkill Canal.

Report of coal transported over the Schuylkill Canal for the week ending Saturday, Sept 16, 1871.

	Tons.	Cwt.
From Port Carbon	—	—
" Pottsville	—	—
" Schuylkill Haven	31,104	15
" Port Clinton	2,703	00
Total for week	33,807	15
Previously this year	647,329	17
Total	681,137	12
To same time last year	261,000	06

Report of Coal Transported over Central R.R. of N. J. (Lehigh and Sus. Div.)

Week ending Sept 16—Compared with same time last year.

WHERE SHIPPED FROM	WEEK 1871., tons ct	WEEK 1870. tons ct.	YEAR 1871 tons cwt.	YEAR 1870. tons cwt.
Wyoming Region	31449 08	25922 13	849688 13	859812 06
Upper Lehigh Region	4302 07	3710 03	52142 01	104527 18
Beaver Meadow Region				
Hazleton Region	12672 08	8738 07	104395 00	211655 18
Mahanoy Region				
Trescow Region	3774 03		37723 13	
Mauch Chunk Region	5100 15	4251 17	136084 07	58912 01
Totals	57299 01	42623 00	1179833 14	1234908 03
Increase	14676 01			
Decrease			55074 09	
DISTRIBUTION.				
Forwarded East of Mch Chunk by Rail	29972 12	20663 04	820083 17	697523 16
Forwarded East of Mch Chunk by Canal.		16809 12	234313 09	341777 19
Delivered at and above Mauch Chunk	21751 12			
	1097 17	969 14	41197 00	30415 16
Delivered to L. & B. R. R.at PlymouthBridge	4098 04	3683 00	60680 04	146788 07
L. V. R. R at Packer'n	378 16	497 10	23559 04	18402 02
Totals	57299 01	42623 00	1179833 14	1234908 03
Of the above there was transported on acc'nt of L. C. & N. Co.	10102 05	6135 14	194 33 06	82951 07
W.-B. C. & I. Co.	16731 09	15411 05	593532 15	403331 09
Totals.	26833 14	21546.19	787766 01	486282 07
Increase	5286 15		301483 14	
Decrease				

Lehigh Coal and Navagation Company,

Report of Coal transported over the Lehigh Canal and L. & S. Div. of Central Railroad of New Jersey for the week ending Sept 16, 1871, and for the year 1871.

		WEEK.	YEAR.
Forwarded East of Mauch Chunk by Rail		29,972	820,083
Delivered at and above	do.,	1,097	41,197
Forwarded East of	do., by Canal.	33,187	413.172
		64,257	1,274,453
Corresponding period last year—			
Forwarded East of Mauch Chunk by Rail		20,663	697,523
Delivered at and above	do.,	1369	30,415
Forwarded East of	do., by Canal.	28,685	478,195
		50,318	1,206,134
Increase on Railroad		9,437	133,341
Decrease " "			
Increase on Canal			
Decrease " "		4,502	65,023
Of the above there was transported on account of—			
Lehigh Coal Nav. Co		19,286	353,698
Wilkesbarre Coal & Iron Co		16,731	593,532
		36,017	946.631
Corresponding period last year—			
Lehigh Coal Nav. Co		13,701	116.207
Wilkesbarre Coal & Iron Co		15,411	403.331
		29,112	519,538
Increase		6,905	427,092

Report of Coal Transported over Lehigh Valley Railroad

Report of coal tonnage for week ending Sept 16, 1871, previously this season, compared with same time last year:

WHERE SHIPPED FROM.	WEEK. Tons. Cwt.	TOTAL Tons. Cwt
Total Wyoming	19,414 12	391,921 02
" Hazleton	52,335 00	803,072 12
" Upper Lehigh	44 12	1,468 16
" Beaver Meadow	21,611 08	291,427 19
" Mahanoy	9,695 06	375 656 07
" Mauch Chunk	57 00	6,929 06
" Sullivan & Erie.	527 13	1,320 17
Total Anthracite	103,635 11	1,871,796,19
Bituminous Coal from all sources	8,545 00	284,790 00
Total by rail and canal	112,230 11	2,156,586 19
Same time last year	76,421 13	2,828,640 01
Increase	35,808 18	
Decrease		672,058 02
Forwarded East from Mauch Chunk by rail	72,431 17	1,469,326 11
Same time last year	55,605 01	2,236,942 13
Increase	16,826 16	
Decrease		767,616 02

RECAPITULATION.

Forwarded East from Mauch Chunk by rail	72,431 17	1,469,326 11
To N. C. R. R., at Mount Carmel		4,066 11
Forwarded North from L. & B. Junction	13,246 03	199,980 00
To L. & S. R. R. at Packerton for rail	394 05	4,675 11
Delivered at M'h Chunk	21 15	770 04
Delivered on line of road above Mauch Chunk	356 19	7,569 09
Delivered above Mauch Chunk for use of L. V. R. R.	932 10	36,611 07
To L. & S. R. R., at Penn Hav., for railroad		94 10
Do. for canal	12,314 12	107.322 05
At M. Chunk for canal	3,987 10	41,380 11
Total Anthracite	103,685 11	1,871,796 19
Bituminous Coal	8,545 00	284,790 00
Total all kinds	112,230 11	2,156,586 19

This report includes all Bituminous Coal carried over the Lehigh Valley and P. & N. Y. Railroads from December 1st, 1870, to date.

Shamokin Coal Trade.

For week ending September 16, 1871	10,705 09
Same time last year	13,070 07
Increase	
Decrease	2,364 18
Total amount shipped to date	452,243 08
Same time last year	329,851 18
Increase	122,391 10
Decrease	

Delaware and Hudson Canal Company.

Coal mined and forwarded by the Delaware and Hudson Canal Campany for the week ending Saturday, Sept 18, 1871.

	WEEK.	SEASON.
North	57,034 11	896 471 00
South	10,026 17	197,412 14
Total	67,061 08	1093,883 14
Corresponding time in 1870:		
North	42 302 10	1,607,014 11
South	11,294 15	330,484 06
Total	53,597 05	1,937,498 17
Increase North	13,464 03	
Decrease South		
Total decrease		843,615 03

Delaware and Hudson Canal Company.

The following is a statement of Coal transported by the Delaware and Hudson Canal Co., for the week ending Sept. 16, 1871.

	WEEK.	SEASON.
By Delaware and Hud. Canal,	33 963 09	615,715 00
By Railroad East,	9,736 00	288,399 09
" West,	4,436 00	69,298 00
" South	10,027 00	197,413 00
TOTAL TONS,	58,162 00	1,090,735 00
For the same period last year.		
By Delaware and Hudson Canal		1,100,193 00
By Railroad East,	9113 00	269.377 00
" West,	17:1 00	60,722 00
" South,	11295 00	330,484 00
TOTAL TONS,	22,179 00	1.760,776 00
Decrease		

Delaware, Lackawanna & Western Rail Roa Company.

Coal transported on the Delaware, Lackawanna and Western R. R. for week ending September 18, 1871.

	Week. Tons. Cwt.	Year. Tons. Cwt.
Shipped North	19,907 06	316,232 02
Shipped South	43,515 02	706,652 08
Total	63,422 08	1,022 884 10
For the corresponding time last year:		
Shipped North	17.187 10	542,656 16
Shipped South	33,334 07	1.244,009 08
Total	50.521 17	1,786,666 04
Increase	12,900 11	
Decrease		763,781 14

Huntington and Broad Top R. R. Co.

For week ending Sept. 16, 1871	3,796 tons.
Same time last year	6,554 "
Increase	
Decrease	2,758 "
Total amount shipped to date	230,937 "
Same time last year	218,852 "
Increase	12,085 "
Decrease	

Statement of Coal Transported over Cumberland and Pennsylvania Railroad

During the week ending Saturday Sept. 9, and during the year 1871, compared with the corresponding period of 1870.

WEEK.

	To C. & O. Canal Tons. Cwt.	To B. & O. R. R. C. Tons. Cwt	Total. Tons Cwt
1871	14,506 18	24.627 05	39,134 03
1870	13,540 13	19,339 08	32,880 01
Increase	966 05	5,287 17	6,254 02
Decrease			

YEAR.

1871	480,881 13	879,559 03	1,360,440 16
1870	378,308 08	592,901 07	971,209 15
Increase	102,573 05	286,657 16	389.231 01
Decrease			

Cumberland Branch

WEEK.

	To C. & O. Canal. Tons. Cwt.	To B. & O. R. R. Co Tons Cwt.	Total. Tons. Cwt.
1871	5,310 02	1,913 16	7,523 18
1870	1,776 02	4,222 26	5,998 18
Increase	3,834 00		1,525 00
Decrease		2,309 00	

YEAR.

1871	141,956 16	51,679 04	193,636 00
1870	66,636 03	79,017 01	145,653 04
Increase	75,320 13		47,982 16
Decrease		27,337 17	

Line Prices for Coal Sept, 1871,

	Lump	Broken	Egg	Stove	Ches'.
At Mauch Chunk	4.50	4.00	4 00	4.25	3.50
" Wilkesbarre,	3 75	3.75	3.75	4.00	3.25

Company Coals.

Sept, 1871.

	L.	Str.	Gra.	Eg.	Sto.	Chest
*Scranton at E. Port	— —	— —	— —	— —	— —	— —
*Pittston at Newburgh	4 90	4 90	5 10	5 20	5 50	4 80
*Lackawana at Rond't	4 80	5 00	5 40	5 60	5 95	5 10
Wilk'b're at Hoboken	4 65	4 75	5 40	5 50	6 00	4 80
Old Co. Lehigh at PtJohn'n	6 25	— —	5 75	5 75	6 00	5 00
Lehigh at Eliz. Port	6 25	— —	5 75	5 75	6 00	5 00

For freights to different points see "Freights."

* To contractors.
* None to sell.

Prices of Coal by the Cargo.

[CORRECTED WEEKLY.]

	AT NEW YORK, Sep. 1. R. A.	W. A.	AT PHILADELPHIA. Sep. 1. R. A.	W. A.
SCHUYLKILL.				
Lump	$— —	$— —	— —	— —
Steamer	6 00	— —	— —	— — 4 50
Broken	5 75	— —	— —	— —
Egg	5 90 —	— —	5 00	— — 4 75
Stove	6 00 —	— —	5 00	— — 5 00
Chestnut	4 60 —	— —	— —	— —
Pea	— —	— —	— —	— —
LEHIGH.				
Lump, (along side)	6 50	——	— —	— —
Broken	6 00	— —	— —	— —
Egg	6 00	— —	— —	— —
Stove	6 25	— —	— —	— —
Chestnut	5 25	— —	— —	— —
Pea	— —	— —	— —	— —
SPECIAL COALS.*				
Diamond Vein	R. A. 6 00@6 25		— —	— —
New England	"	—	— —	— —
Locust Mountain	W. A.	6 50	— —	— —
Honey Brook, Le'h	W.A.	5 00@6 25	— —	— —
Spring Mountain	" "	5 00@6 25	— —	— —
Sugar Creek	" "	5 00@6 25	— —	— —
Sugar Loaf	" "	5 00@6 25	— —	— —
Old Comp'y's.	" "	5 00@6 25	— —	— —
Cross Creek	" "	5 00@6 25	— —	— —
Room Run	"	5 00@6 25	— —	— —
Girardville	" "	—	— —	— —
McMichael	" "	— —	— —	— —
Shamokin	" "	5 25	— —	— —
Lykens Valley	" "	5 75	— —	— —
Broad Top	" "	5 25	— —	— —
Hill & Harris	" "	— —	— —	— —
Henry Clay	" "	— —	— —	— —
Powelton	"	5 25	— —	— —

*Dealers in these coals may be found in our advertising columns

Prices at Baltimore—Sept, 1871.

Wholesale Prices to Trade.

Wilkesbarre, by cargo or car load	$5 25@5 50
Pittston and Plymouth, do	5 25@5 40
Shamokin Red or White Ash, do	5 25@5 40
Lykens Valley Red Ash, do	— —@5 80
Zerba Valley	— —@— —
Treverton	— —@— —
By retail, all kinds per ton of 2240 lbs	7 00@7 50
Georges Creek & Cumberland f. o. b. at Locust Point for cargoes	— —@4 75
Fairmount and Clarksburg gas, f. c. b. at L. Point	6 00@6 50
BITUMINOUS COALS.	
Kittaning Coal Co.'s Phœnix Vein f.o.b. at Phila	$ —
" Lemon " "	—
Cumberland Vein Coal	—
Consolidation Coal Co.'s on board N. Y.	6 75
Maryland Coal Co. " "	6 75

Prices at Georget'n, D.C., & Alexandria, Va.

Sept, 1871.

George's Creek and Cumberland f. o. b. for shipping	$4 50@4 60.

Prices at Havre de Grace, Md.

Wilkesbarre and other White Ash for cargoes	$5 50@5 75
Lykens Valley	6 00@6 20
Shamokin Red or White Ash	5 50@6 50
Trevorton and Zerba Valley	— —@— —

Freights.—Sept,, 1871

TO EASTERN PORTS.	Cumberland. From Georgetown.	Cumberland. From Baltimore.	Anthracite. From Philadelphia.	Anthracite. From East Port, Port Johnston, and Hoboken.	Anthracite. From Newburg...	Anthracite. From Rondout....
Amesbury			$2 50	$1 75		
Bangor	$2 75		2 25	1 60		
Bath	2 75	2 65	2 35	1 75		
Boston	2 60	2 60	2 25	1 75	180	1 80
Bridgeport	2 25	2 30		1 10	1 10	1 25
Bristol		2 60		1 40		1 55
Cambridgeport			2 35	2 00		
Derby				1 25		
Dighton	2 30	2 35		— —		
East Cambridge				2 00		
Fall River	2 25	2 30		1 40	1 40	
Hackensack				90		
Hartford	2 75	3 00	2 40	1 15		
Jersey City		2 00		60	70	
Middletown				1 25		
Mystic				1 10		
New Bedford	2 50	2 35	2 00	1 40		
Newburyport	2 75			1 75		
New Haven	2 25	2 30		1 15	1 10	1 35
New London	2 25	2 30	1 95	1 25		2 20
Newport				1 40		1 25
New York	2 00	1 90	1 40	75	70	1 40
Norwalk		2 30		1 60	1 10	65
Norwich	2 25	2 30		1 20	1 40	1 50
Pawtucket	2 50	2 50	2 15	1 40		1 65
Portland	2 50	2 60	2 40	1 50		2 00
Portsmouth, N.H	2 75	2 75		1 80		1 50
Providence	2 25	2 30	2 00	1 40	1 50	
Rockport						
Saco	2 75		2 65	1 75		
Sag Harbor				1 20		
Salem	2 60	2 65	2 25	1 80		
Stamford				1 00	1 10	
Stonington				1 25	1 20	
Taunton				1 80		1 40
Warren				1 30		
Washington			1 25			
TO RIVER PORTS.						
Albany		60			55	
Catskill		70			50	
Cocksackie		70			50	
Coeyman's		70			65	
Cold Spring	2 20	70			30	
Fishkill		70	1 60		30	
Haverstraw					60	
Hudson	2 20	2 25			40	
New York					60	
Nyack			1 75		30	
Poughkeepsie					30	
Rhinebeck						
Rondout					75	
Saugerties			1 60		40	
Sing Sing					75	
Stuyvesant					75	
Tarrytown					75	
Troy					55	
West Point			1 75			
Yonkers					60	

Foreign and Provincial Freights.

Sept, 1871.

Foreign.	
Newcastle and Ports on Tyne, per keel of 21 1-5 tons	£14 00@£16 00
Liverpool, 5 per cent primage	13s @15 ton.

Prices of Gas Coals.

Sept, 1871.

PROVINCIAL.

Corrected weekly by Louis J. Belloni, Jr., 41-43 Pine st., N.Y

Duty, $1 25, gold

	Coarse	Slack.
Block House	$1 75	@-1 75
Gowrie	1 75	@-1 75

Corrected by Bird, Perkins & Job, 86 South street.

	Coarse.	Culm of Coal
Pictou	$2 25	@1 25
Sydney	2 25	@- 80
Lingan	1 60	@- 80
Little Glace Bay	1 60	@1 00
Caledonia	1 60	@- 80

A discount from the prices of the coarse Coal on purchase of 5000 tons and upwards. Duty $1 25 per ton, gold, on the coarse coal. 25 per cent. ad valorem on the Culm of Coal.

AMERICAN.

	Currency.
Westmoreland	$7 00 @- —
Fairmount Gas Coal Co. of N. Y.	7 00 @- —
Despard Coal Co	7 00 @- —
Penn	7 00 @- —
Newburg Orrel Gas	— — @- —
West Fairmount Gas Coal	7 00 @- —

AT PHILADELPHIA.

Powelton	$6 75

TO NEW YORK.

Provincial.	
Sidney	$3 25
Lingan	3 25
Cow Bay	3 37½
Port Caledonia	3 37½
Little Glace Bay	3 25

Prices of Foreign Coals.

Sept, 1871.

Duty $1 25 per ton.

Corrected weekly by PARMELE BROS., No 32 Pine street, N. Y.

Liverpool Gas Caking	$ 8 00@— —
" " Cannel	10 50@12 00
" House "	— —@16 00
" Orrel	12 00@14 00

Per ton 2,240 lbs., ex-ship.

PRICES FROM YARD.

Liverpool House Orrel, screened	$16 00@17 50
" Cannel, "	18 00@20 00

Per ton 2.000 lbs. delivered.

Rates of Transportation to Tide Water.

BY RAILROAD.

TO PORT RICHMOND, PHILADELPHIA.

Philadelphia and Reading Railroad, from Schuylkill Haven for consumption	$1 95
For reshipment	1 85

MAUCH CHUNK TO ELIZABETHPORT.

L. V. Railroad from Mauch Chunk to Phillipsburgh	$0 85
C. R. R., N. J., Phillipsburgh to Elizabethport	1 26
Shipping expenses at Elizabethport	25
Wharfage	10
Total	$2 46

MAUCH CHUNK TO PORT JOHNSON.

L. V. R.R., or L. & S. R.R. from M. C. to Phillipsb'g	$0 58
C. R. R., of N. J., Phillipsburgh to Pt. Johnson	1 26
Shipping expenses	25
Wharfage	10
Total	$2 46

TO HOBOKEN.

L. V. R. R., Mauch Chunk to Phillipsburgh	$ 85
Morris & Essex R. R. Phillipsburgh to Hoboken	1 25
Shipping expenses	20
Warfage	16
Total	$2 46

TO SOUTH AMBOY.

L. V. R. R.	85
R. & D. R. R.	1 21
Cam. & Am R. R.	
Shipping Expenses,	35
Total	$2 4

PENN HAVEN TO ELIZABETHPORT.

L. V. R R. Penn Haven to Phillipsburgh	90
C. RR. of N. J. Phillipsburgh to Elizabethport	126
Shipping expenses	25
Wharfage	10
Total	$ 2 51

BY CANAL.

Via Schuylkill Canal.

TO PHILADELPHIA.

From Schuylkill Haven..Toll..$1.25 Freight..90c	$2 15
" Port Carbon	
" Port Clinton " 1.18 " 85c	2 02

Drawback 15 cents during August.

TO NEW YORK.

From Schuylkill Haven....Toll..1 10 Freight..$1 85..$2 95

The Rates of Toll on Lump and Steamer Coal will be ten per cent less than the above rates. The charge will be per ton of 2240 lbs. No charge less than Forty Cents per ton will be made for any distance. A drawback of thirty cents is allowed on all coal passing Fairmount Locks used at Philadelphia and vicinity.

Via Lehigh Canal.

TO PHILADELPHIA

Lehigh Canal	$ 76
Freight and towage	1 10
Total	$1 86

TO NEW YORK.

Lehigh Canal	$1 48
Morris Canal	
Freight	
Towing	208
Total	$2 56

TO JERSEY CITY.

Lehigh Canal	$ 48
Morris Canal	
Freight	2 06
For re-shipment	2 54

Via Delaware and Raritan Canal.

TO NEW YORK.

Lehigh Canal	$ 76
Delaware Division Canal	38
Delaware and Raritan Canal	
Freight	1 25
Towage	20
Total	$2 59

MARKET REVIEW.

FOR THE WEEK ENDING SEPT. 23, 1871.

IRON.—The arrivals of Scotch Pig have been quite liberal, and prices have shaded a trifle, inducing quite an active demand—sales have been made of 1,200 tons Eglinton at $33, ex ship—we quote Glengarnock $33 50@$34. Garthsherrie, $35@$35 50, and Coltness, $37@$38. American is scarce and in demand at full quoted rates—100 tons No. 1 Lehigh sold at $37, and 100 do. No. 2 do., $35, New Rails remain quiet and steady at quoted rates. Refined Bar is in usual supply, and prices are steady and firm. Swedes Bar is in small stock, but the demand is light, and by the time the usual Southern demand comes, ample supplies are expected. Russia sheet, in perfect condition, is in very small stock, and prices have advanced to 15c. gold, with sales of 600 packs in Boston, and 50 packs here, at this price—nearly all here is more or less damaged. Common sheets are steady at our quotations.

LEAD.—The market for Foreign Pig has been inactive, and prices are not very firm—50 tons Spanish sold within our range. Bar 9¼c., Sheet and Pipe 10¼c., and Tin lined Pipe 15c., less 10 per cent. to the Trade.

COPPER.—New Sheathing and Yellow Metal remain as as last noted. Ingot has been in good demand, and the market has advanced, closing at 23⅞@24c., cash; sales 5 @600,000 lb. Lake at 23⅞@23¾c., cash, and 23¾@24c. for forward delivery; 12,000 lb. old Sheathing, for chemical purposes, sold at 23½c., cash.

SPELTER.—Foreign remains quiet but steady at 5¾@ 6 ¼c., gold, as to brand; 20 tons Silecian sold at 6c., gold; and 20 do. G. H., 7c., currency. Domestic is quoted at 11c., currency.

STEEL.—The market is steady for all descriptions, at former figures.

TIN.—Pig is in fair demand for consumption, and firm, as a general fact, though some lots have been picked up at a shade under previous quotations—the sales are 1,150 pigs Straits in lots. at 36¼@36⅜c.; and ten tons English at 34½@35c., gold. Plates have been in good demand, and the market continues firm—the sales are 3,700 boxs. Charcoal Tin at $8 75@$8 87½c. for assorted, and $9 for ½ X; 500 do. Charcoal Terne, $8 12½@$8 25c., gold; 1,000 do. I. C. Coke, 14 by 20, part to arrive, and 1,500 do. Charcoal Tin for shipment from Liverpool on private terms.

ZINC.—Sheet is firm at previous quotations—50 casks Mosselmann sold in lots at 7⅞@8c., gold, and 9¼@9½c., currency. Manganese, black oxide, is firm at 4½c.; do. pyrolusite, "best," 5½c.

METALS.

NEW YORK, Sept. 23, 1871.

IRON.—Duty: Bars, 1 to 1½ cents ℔ lb; Railroad, 70 cents ℔ 100 lbs.; Boiler and Plate, 1½ cents ℔ lb; Sheet, Band, Hoop, and Scroll, 1¼ to 1¾ cents ℔ lb; Pig, $7 ℔ ton; Polished Sheet, 3 cts. ℔ lb; Galvanized 2½; Scrap Cast, $6; Wrought, $8 per ton,

	Store Prices.
Pig, Scotch No. 1, ℔ ton	33 00@37 00
Pig, American, No. 1	36 00@37 00
Pig, American, No. 2	34 00@35 00
Pig, American, Forge	33 00@34 00
Bar Refined, English and American	80 00@— —
Bar Swedes, assorted sizes (gold)	85 00@100 00
	Store Prices, Cash.
Bar, Swedes	107 50@122 50
Bar, Refined, ord'y sizes	82 50@— —
Bar, Refined, 1¼ to 6 by ¼ @ 5-16 inch	— —@ 87 50
Bar, Refined, 1 & 1¼ by ½ & 5-16	— —@ 90 00
Bar, Refined, 2½ to 3 Round & Square	— —@ 90 00
Scroll	102 50@132 50
Ovals and half-round	100 00@125 00
Band	— —@ 87 50
Horse Shoe	97 50@102 50
Rods, ⅜ to 3-16 inch	87 50@122 50
Hoop	105 00@147 50
Nail rod	6¾@ 7 —
Sheet, Russia, as to assortment (gold)	15@—
Sheet, Single, D. and T. Common	—4¾@— 5¾
Sheet, D. and T. Charcoal	—5¾@—6¼
Sheet, Galv'd, Nos. 14 to 26	27½ to 30 ct. dis. 12@14c ℔
" " Nos. 27, 28, and 29	27½ to 30 ct. dis. 15@18c ℔
Rails, English (gold), ℔ ton	58 00 @— —
Rails, American, at Works in Pa.	70 00 @71 00

STEEL.—Duty: Bars and ingots, valued at 7 cents ℔ lb or under, 2¼ cents; over 7 cents and not above 11, 3 cents ℔ lb; over 11 cents, 3½ cents ℔ lb, and 10 ℔ cent ad val. (Store prices.)

English Cast (2d and 1st quality) ℔ lb		— 15	@— 18
English Spring (2d and 1st quality)		— 7	@— 10
English Blister (2d and 1st quality)		— 10	@— 17
English Machinery		— 11	@— 13
English German (2d and 1st quality)		— 10½	@— 12
American Blister "Black Diamond"		— —	@— 12
American, Cast, Tool	do.	— 15	@— 16
American, Spring,	do.	— 9	@— 11
American Machinery,	do.	— 9	@— 10
American German,	do.	— 9	@— 11

COPPER.—Duty: Pig, Bar, and Ingot, 5; old Copper 4 cents ℔ lb; Manufactured, 45 per cent. ad val.

	All Cash.
Copper, New Sheathing, ℔ lb	— @— 30
Copper Bolts	— @— 32
Copper Braziers, 16oz. and over	— @— 32
Copper Nails	36 @— 38
Copper, Old Sheathing, &c. mixed lots	— @— 20
Copper, old, for chemical purposes, 14@16 oz.	23½@— —
Copper, American Ingot	23⅞@— 24
Yellow Metal, New Sheathing & Bronze	— @— 22
Yellow Metal Bolts	24 @— —
Yellow Metal Nails	— @— 22

SPELTER—Duty: In Pigs, Bars & Plates, $1.50 p. 100 lb

Plates, Foreign	(gold) p. 100 lb. 5 75	@ 6 12½
Plates, Domestic	p. lb. — 7	@— 11

LEAD.—Duty: Pig, $2 ℔ 100 lbs.; old Lead, 1½ cents ℔ lb: Pipe and Sheet, 2½ cents ℔ lb.

Galena, ℔ 100 lbs	$— —	@— —
Spanish (gold)	6 00	@6 05
German, do.	6 00	@6 10
English do.	6 15	@6 50
Bar (net)	9 25	@ —
Pipe (net)	— —	@10 25
Sheet	— —	@10 25

Colwell, Shaw & Willard Tin-Lined Lead Pipe 15 cts. ℔ lb.

TIN.—Duty: Pig, Bars, and Blocks, 15 ℔ cent. ad val.: Plate and Sheets and Terne Plates, 25 ℔ cent.: Roofing 25. ad val.

	Gold ℔ lb.
Banca	40½@—
Straits	36¼@36¾
English	34½@35

PLATES.

Fair to Good Brands.	*Gold.*	*Currency.*
I. C. Charcoal, ℔ box	$8 87½@9 00	$10 25 @10 75
I.C. Coke	7 50 @8 50	9 00 @10 00
Coke Terne	6 37½@7 50	7 25 @ 9 00
Charcoal Terne	8 00 @8 50	9 50 @ 10 00

ZINC—Duty: Pig or Block, $1 50 ℔ 100 lb.; Sheet, 2½cts. ℔ lb.

Sheet, No. 9 Foreign	℔ lb.—	@—	— 9¼ @9½

San Francisco Stock Market.

"By Telegraph."

The following list of quotations from the San Francisco Mining Stock Board is dated the 19th inst. The most noticeable feature in the report is the advance in Kentuck, which capricious item is quoted at $160 per share—being $25 more than the price of the same stock a week ago. Gould & Curry and Crown Point are weaker, each one of which has receded $5 per share, the list with those exceptions being active and firmer. Hale & Norcross was quoted on the 15th inst. at $84. Raymond & Ely is appended to the report as selling at $94¼, which is a decided advance on its recent previous quotations. The Crown Point Gold and Silver Mining Company declared a dividend on the 5th inst. of $10 per share, payable on demand.

Savage	41½
Yellow Jacket	58½
Kentuck	160
Chollar Potosi	30
Gould & Curry	110
Belcher	280
Imperial	45
Amacor	No Sales
Crown Point	325
Raymond & Ely	94¼

Mining Stocks.

NEW YORK, Sept. 21, 1871.

Mining stocks are firmer, which expression defines almost all that can be said of interest in reference to the course of operations in the Mining Stock Board during the past week. Smith & Parmlee slightly declined, being 2c. per share lower than reported in out last, which is the only exception to a general advance. Walkill Assent "Lead" remains at 3c. A sale of 300 La Crosse was effected this A. M. at 19c. The report of the Board is as follows:

GOLD STOCKS.

	BID.	ASKED
American Flag	10	20
Bates & Baxter	25	—
Benton	—	10
Black Hawk	55	80
Central Gold	7	8
Cons Gregory	32	40
Grass Valley	7	—
Gunnell	10	—
Holman	—	—
La Crosse	18	20
Liberty	—	—
Mariposa prf.	—	—
Montana	—	—
Rocky Mount	—	5
Quartz Hill	15	25
Smith & Parmlee	23	—
N. Y. & Eldorado	—	—

Petroleum remains almost as reported in our last—precisely so, if we may except a slight advance in Rathbone, Bergen Coal and Oil and Home. No sales have transpired during the week. The following is the report of the Board.

PETROLEUM STOCKS.

	BID.	ASKED.
Bennehoff Run	20	—
Bergen Coal and Oil	2	—
Bliven Oil	30	—
Blood Farm	—	—
Brevoort	25	—
Buchanan Farm	40	—
Central	64	65
Clinton	—	—
Home	185	—
National	—	—
New York & Allegheny	80	—
Northern Light	35	—
Phillips Pet	—	15
Pithole Creek	—	100
Rathbone Oil	24	30
Rynd Farm	33	—
Second National	—	40
Sherman & B	—	—
Tarr Farm	—	—
United Petroleum Farms	28	35
United States	—	60
Hoffman	—	—

A Chilian Method of Amalgamating Silver Ores,

IN the *Berg* and *Hüttenmännische Zeitung* is contained a more detailed account of this process, which we noticed briefly in our issue of July 18th. This plan is employed in Copiapo, Chili. The ores of this district, consisting of the chloride, iodide and bromide of silver, together with various sulphides of silver, occur in Jura limestone and marl, diabase and porphyry, and have associated with them, as vein-stones, calcite, heavy spar, gypsum, amianthus, kaolin, and in the upper levels ferruginous clay. There has never been any difficulty in completely extracting the metal from the chloride, bromide and iodide by amalgamation, while the sulphurets have always been the cause of large losses in the residues. Kroencke first based his process on the treatment of these residues and subsequently extended it so as to treat the pure sulphides, arsenides and antimonides of silver. The writer made a series of experiments in order to arrive at a theory of the process. He found; 1st; if ruby silver be digested in a finely pulverized condition with a hot concentrated solution of cupric sub-chloride and sodium chloride, a chemical reaction is soon perceptible, the powder turning black. An analysis of this powder shows the formation of argentic sulphide and cupric sub-sulphide, while antimonic chloride is found in the solution. The reactions are $3AgS.SbS_3 + 3(Cu_2Cl) + NaCl = 3AgS + SbCl_3 + 3(Cu_2S) + NaCl$.

2d; if the silver (argentic sulphide) thus obtained be again treated in a hot solution with cupric sub-chloride and sodium chloride, and zinc is added, metallic silver is almost instantaneously formed. The reactions are

$AgS + Cu_2Cl + NaCl + Zn = Ag + Cu_2S + NaCl + ZnCl$.

The zinc probably acts as electro-positive metal pre-disposing the atoms of argentic sulphide and cupric sub-chloride to a mutual exchange, so that the cupric sub-sulphide and argentic chloride are formed; which last is decomposed in a nascent state by the zinc with the formation of zinc chloride and silver. If the very finely divided argentic sulphide obtained in the first experiment be taken, the action of the reagents is almost instantaneous. If, however, the experiment be made with a small piece of argentite (AgS) in contact with a small piece of zinc, a dull white coating is formed on the surface of the argentite, which is probably argentic chloride, and which only assumed a metallic appearance with prolonged action of the zinc. 3d; if in the second experiment mercury be also added, the reduction of the silver takes place still more rapidly, while at the same time amalgam is formed. Lead can be used instead of zinc and both act more powerfully when used in the form of amalgam. The chief points in this method of treatment are: 1st, the use of a hot concentrated solution of cupric sub-chloride and sodium chloride especially of the latter in order to retain a larger amount of cupric sub-chloride in solution and to prevent the formaion of basic copper salts. 2d, The use of perfectly dry ore, finely pulverized, in order that it may easily absorb the solution. Wet ores cause the formation of basic salts and hence loss of effective cupric sub-chloride, as well as imperfect impregnation. 3d, The use of cupric sub-chloride and of lead or zinc in combination with mercury as amalgam, in such quantities that the reactions described may take place through all the ore without any excess of the last-mentioned metals. Since an excess of cupric sub-chloride is generally used, this last will be decomposed by the lead (or zinc) and copper formed, which pass into the amalgam, and whose removal is always troublesome when present in large quantities. Kroencke treats very cupriferous amalgam, after having been squeezed and ground in a centrifugal apparatus, with a hot solution of cupric chloride in order to extract the copper. ($CuCl + Cu = Cu_2Cl_2$) 4th, It is always advisable, as far as practicable, to treat ore of constant composition, as otherwise experiments on a small scale must be constantly made, even when but slight variations occur in the nature of the ore. The presence of mere traces of blende make the process much more expensive, while large amounts of the same render the use of this method impossible, as the cupric sub-chloride solution is instantly decomposed by the blende.

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DEPARTMENT OF POPULAR SCIENCE.

Teaching the Teachers.

IT has long been felt that the kind of instruction on scientific] subjects which is usually imparted to the young scholars at our ordinary schools, is sadly in need of improvement. The pupils are, it is true, taught in a certain general way, a few of the main laws which govern living and inanimate things, but very few have any vivid sense of their whole importance, and their living reality and force. The cause of this state of things is not difficult to discover. In England they have discovered it and already taken steps to remedy the evil, the real importance of which they seem to have appreciated before attention in this country was directed to the subject, or before we reflected upon the extent of the harm unintentionally done in this way. If, however, we pause a minute to consider, why it is that nine-tenths of the people who are well informed on the general topics of the day, and well read in the current literature, are extremely ignorant of what CARLYLE called "The Science of things generally," we will see that it is because their attention has never been properly directed towards such subjects.

For example, how many people will you find, even among what we call the educated classes, who have a clear conception of the phenomena of physiology? We cannot think that such things would not interest a person of ordinary intelligence, if they were properly placed before them, because we find that when the opportunity really is presented, they embrace it with great avidity. With reference to astronomy the case is the same. How many of our readers can tell the cause of the rising of the moon in August at nearly the same time for three or four evenings, or in other words, explain the phenomenon of the "Harvest Moon," which almost everybody has noticed?

The fact is, that what our religious teachers call a "realizing sense" of scientific facts, can only be obtained by observation of the things themselves in nature, or by having one's attention excited by a person who is thoroughly and practically acquainted with the subject.

In most of our schools, certainly in all good schools, instruction is given in Natural Philosophy, and under this general title are included all manner of scientific branches. The scholar learns there the first rudiments of "the science of things in general," and, because he finds the study dry work, often fails to extend his researches, or his reading, in that direction after his school days are over, and soon forgets what little he once knew. He has tried the thing once, and because he vividly remembers how toilsome it was, has no desire to again launch his bark on scientific seas.

It appears to me that the cause of this is to be found in the fact that, though the teacher was, perhaps, well posted in book-knowledge on the subject, he had never had an opportunity of witnessing for himself the natural occurrence of the things he describes, and hence has but little enthusiasm on the subject himself. A personal intercourse with Nature is necessary in order to catch her fire.

It cannot be expected that enough able scientists and original investigators can be found to teach in all the schools of the country, and, as the easiest way of inspiring an interest in such things, the English Government collected a number of the ordinary teachers of scientific subjects in the schools of the United Kingdom, and caused them to be practically instructed by the most able men of the country, and then sent them forth, to try in this way to leaven the whole mass. The instruction was theoretical and practical combined. In the morning a lecture was delivered on some subject, and in the afternoon practical experiments on the same subject were made by the students. A little leaven is said to go a great way, and we hope that the English experiment will prove successful; we wish, in fact, that it could be tried here without waiting to see how it turns out in England.

W. P. W.

The Use of Steam on Passenger Boats.

TO THE EDITOR—Sir: In my last article in your journal, on Boiler Explosions, I alluded to the plan you propose of erecting a stand pipe, or tube, on steam boilers of the low pressure class, and made some remarks on its utility, simplicity, ease of application, etc., and now, if you will allow me space for the purpose, I will endeavor to explain, to make more clear and intelligible, what I then briefly asserted.

In erecting this tube, common wrought iron pipe, such as is used for gas purposes, of ¾ of an inch, or an inch diameter, is all that would be required, and this inserted through the top of the boiler, and carried down to its low-water line, and thence up by the smoke stack to the height of 32½ feet, would, as you say, counterbalance a pressure of 15 pounds to the inch, which is all I would allow on passenger boats. In thus limiting them, allow me to say the speed would not be so greatly lessened, by any means, as persons unacquainted with the laws which govern the case might imagine.*

This pipe, or tube, it will be understood, is to be open at both ends, and, without valve, or stop-cock of any kind attached to it, carried up to the requisite height, and then returned down to the engine-room, or front of boiler, when it would at once indicate an over-pressure of steam, by water issuing from the orifice of the tube, in case of the pressure being above what should be the maximum, or, if the water should get below the proper line in the boiler, then steam must issue. I do not undertake to say this plan precludes the necessity of care and attention. Somebody must be on hand to notice the indications, and to use such precautionary measures as may be demanded.

Formerly, in the early days of steam-boating, when people were contented to use a moderate and safe pressure of steam, no such plan as this was absolutely necessary, but now, when the question of safety is lost sight of, it is, and its great simplicity is a recommendation, which cannot escape the notice of any one who will give it a moment's consideration. Its certainty of action is another valuable consideration, for, being governed by laws which nature has enacted, there can be no mistake here; and, further than this, the arrangement is not liable to any abuse unless it be done wilfully and intentionally, in which case there would be some chance of fixing blame where it belonged.

I before noticed some of the theories put forth to account for the bursting of boilers, which excuse steam from all agency in the matter—omitting, of course, the numerous cases in which "no cause for bursting could be assigned!"

I now only refer to them again to say they have never been propounded or advocated by any one qualified by scientific or other attainments to speak authoritatively. I therefore discard and condemn them, separately and *en masse*.

In any attempt to introduce the plan we have been considering, into use, and limiting the pressure of steam, I am aware that it would be considered by the multitude as "advancing a step backward," and the amount of prejudice and ignorance to be combated would be very large. If, however, this could be done successfully, which remains to be seen, the effort would be amply rewarded in the reflection that one had been a public benefactor. Accidents, as they are usually termed, have been too frequent among us of late, but some good may come of them yet. Scarcely any moral or physical evil is permitted without some incidental good resulting from it. But as matters in New York look just at present, you cannot be congratulated on a freedom from either class of these pests.

However, this is a digression from the main subject, and my communication is longer than was intended, so I now only venture the remark that, in my opinion, too great an effort has been made, in some quarters, to attach odium to certain parties unfortunately connected with our late steamboat disasters. They have done nothing more nor less than other steamboat men have done, and are doing daily, constantly, almost without any exception. Until the system is, in some way, changed for the better, accidents will continue to occur as heretofore.

Sept. 18th, 1871. AN OLD ENGINEER.

* The velocity varies, we believe, with the cube of the power employed to propel the boat.—[ED.]

The Treatment of Copper Regulus by the Bessemer Process.

A GERMAN cotemporary contains a long series of articles detailing experiments made by Messrs. VON JOSSA and SALETIN as to the practicability of proposed plans. The following summary of the conclusions arrived at by these gentlemen is given in a recent number of the *American Chemist:* 1st, That in practice it will scarcely be possible to treat copper regulus for the production of black copper by the pneumatic process with the use of superheated steam alone or combined with compressed air. 2d, That the production of black copper in converters by the use of much compressed air, even if possible, would be unadvisable, both on account of the great loss of copper and also from the copper forming incrustations on the sides of the converter. 3d, That SEMENIKOF's proposition deserves the greatest attention, and may be of great service, if it be used for the treatment of copper regulus (having the general composition $Cu_2S+3FeS$) under the following conditions: A., the copper matte produced in the shaft furnace must be conducted directly into the converter after being tapped, so as to avoid remelting it. B., the process must be conducted in the converter so as to stop when a product containing 73-80 p. c. copper has been obtained (expressed by the formula $Cu_2S+0.12FeS$ or Cu_2S). 4th, The product obtained by the Bessemer process ($Cu_2S+0.12FeS$ or Cu_2S), must be treated in a refining furnace. The advantages claimed by the authors for this new method are the saving of time, fuel, and wages.

Inspectors of Coal Mines.

COMPLAINTS reach us, from many quarters, concerning the lack of education and knowledge of the duties of the position, prevalent among the Mine Inspectors and bosses in Pennsylvania. For example, we make the following extracts from a private letter recently received:

September 1, 1871.

The system of employing "cheap" and ignorant men, by the operators, must be altered, or accidents will yet be more numerous. Contrast their conduct with that of English colliery owners, who, when they require a mine boss or a superintendent, advertise their requirements in a mining paper, and thus secure plenty of choice and the best men. Instead of this, in the States, men are selected from the working miners, whose sympathies are entirely against their employers, and who are regularly and notoriously in league with their workmen. Numbers of the miners in the coal fields here have employed, as mine bosses, men who are ignorant of every matter connected with profitable and economical mining—men whose knowledge is confined to blowing or blasting coal in a chamber, whose pay averages $100 per month, and yet who, in a *few* years, are able to command thousands, owing to the perfect understanding that exists between themselves and their old fellow-miners, now their partners in assisting to rob their employers. What a different result would be obtained if operators secured proper men and paid them adequate salaries, to place them above suspicion, etc., etc.

I would just add that ———— is a young Scotchman, who has properly served his time to good men in the Old Country, as a superintendent, and combines a thoroughly scientific and practical knowledge of his business, and is destined to make his way ere long as a first-class man. It is from men of M ————'s stamp that our inspectors must be selected at our next election.

THE ENGINEERING AND MINING JOURNAL.

ROSSITER W. RAYMOND, Ph. D.,
WILLARD P. WARD, M. E.,
Editors.

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Narrow Gauge Railways.

So much has already been said and written upon this important subject, that a brief discussion of the arguments advanced, both for and against this plan of building railways may be read with interest.

The first thing, necessary to a clear conception of any comparison of two things, is to be sure that like things are compared with like. Thus, for example, when we wish to compare two systems of railways in order to decide upon the best gauge, we must be certain, that in other respects, they are constructed so nearly alike that the difference which we discover in the economy of the two, is due to no other cause than the difference in the gauge. If this homogeneity be wanting the validity of the arguments must fail to be established.

Now let us see how this general principle applies to the discussion of the gauge question. In the first place the advocates of the narrow gauge claim, in favor of their system, a considerable reduction in the first cost of construction and equipment of the road. They claim that in the excavation of cuts and the filling of enbankments there is a very considerable saving. But it has been conclusively proved by good authorities that their saving from this source has been much over-estimated. It is very clear that in passing through the same material in the construction of a cut, or in the filling of an embankment with the same material, the saving in favor of the narrow-gauge, will be merely that of a narrow slice of earth, with parallel sides, which lie in the same plane with the sides of the cut or embankment. If, for example, we suppose a cut already made of sufficient size for a three-foot road, and we wish to enlarge it to accommodate a road five feet in width, how much additional material must be excavated? Suppose the height of this cut to be ten feet, its length one hundred feet, and the angle of the sides 45 degrees. For a th ree-foot road the width of the road-bed required would be 6 ft., and we should have to remove about 600 cubic-yards of material. If we wished to make the road-bed eight feet wide, in order to accommodate a five foot road, we should only have to take out 66 yards, or eleven per cent. more. Hence it would be fair to say, that the cost of excavation and embankment would be reduced about ten per cent. on a narrow gauge road. The same argument and the same figures of course hold good, in the main, for embankments. The editor of the *Railroad Gazette* says with reference to this subject that "in a comparatively level region, 10 per cent., and for a more hilly section, 6 to 8 per cent. would be about the difference between a 3-feet and a 4-00 8½ inch road of the same character of grades and alignment."

It will be noticed that our calculation was based on a five-foot (or Southern) gauge, while the latter statement is for the 4 foot 8½ inches gauge commonly used in the Northern States.

The advocates of the narrow gauge also claim that much lighter iron can be used on the narrow gauge lines and thus the first cost of the road materially diminished. But this is accomplished by making the rolling stock exceedingly light, much lighter than has hitherto been considered consistent with durability on broader gauges. If, however, this is balanced by the slower speed of the narrow-gauge trains, the inquiry becomes pertinent, why cannot precisely the same thing be done on a broad-gauge? We commenced in this country, thirty years ago, with cars of various kinds, light locomotives and light railways generally. They usually began with a single track and, in the Northern States, the majority of the roads have not only since laid a double track, which means the doubling of the capacity of the road, but they have continually kept building heavier cars and heavier locomotives. It seems to us that this experience is worth something more than the plans and speculations of a few engineers, which yet remain, in this country at all events, to be practically proved. It is further claimed that the curves on the narrow gauge may be made much sharper than is common on ordinary roads, and that thus the cost of excavation, etc., may be reduced. We are told that the shortest curve on the Festiniog road has a radius of 115 feet, but that the average curves are of 400, 450 or 500 feet radius. We are informed also that some of the branches of the Pennsylvania Railroad have curves of 350 feet radius; and these are roads of the ordinary gauge. The curves passed over by the cars on entering the New Haven Railroad station at Twenty-seventh street in this city are constructed on a radius of but 38 feet.

Now, although we are willing to admit that, in the amount of the slipping of the wheels on the track, there is doubtless a small advantage in favor of the narrow gauge, still it must be apparent that there are other functions besides the width of gauge which determine the possible shortness of the curves. The chief of these is speed. The tendency of the train to leave the track in passing a curve is due to centrifugal force, and the stability of the train is the chief antagonistic force. The latter is mainly dependent on the breadth of gauge, while the former depends upon the velocity. But suppose that even in this respect we allow a slight advantage to the narrow gauge, and it is evident that it cannot be a great one; shall we then find the argument for the superior economy of the narrow gauge proven? We think not.

The uniformity of gauge which now exists, with but very few exceptions, on all the roads of the Northern States constitutes the great beauty, and we may add economy, of the railroad system of our section of the country. We can send a car over a dozen different roads, and over thousands of miles, without ever unloading the freight. If we introduce one new gauge, we may introduce a dozen, for doubtless when the narrow-gauge people find that three feet is too narrow, some will doubtless want to make it 3 feet 3 inches, and others 3 feet 6 inches, just as they now talk of the 3 feet, instead of the 1 foot 11 inch gauge, with which they began.

Experience has shown that a 4 foot 8½ inch gauge does not afford too great capacity for a road which has been running for a few years through a prosperous country. As we remarked before, nearly all the roads in the North have doubled their track since they began, and several are now even laying a third track. A narrow gauge road may do well enough for a road without connections, and where there is no possibility of a sufficient increase of traffic to supply a road of greater capacity. The main advantages of the narrow-gauge, as it has been explained to us, can be secured on a light road of the ordinary gauge, hence we fail to see the advantage of breaking up the existing uniformity.

The American Institute Fair.

DURING the past week a noticeable change for the better has been made in the appearance of the exhibition. A great many articles of interest, machines, and instruments of various kinds, have been introduced, so that the most desirable locations for exhibition are now pretty much taken up. People have come to know that there is no use of visiting the fair till it has been open for some little time, and so the attendance of visitors is also continually increasing.

It is, however, even yet, almost too early to attempt a full description of the fair, so we shall content ourselves, for the present, with a brief notice of one or two things which especially attracted our attention at a recent visit. Nobody need to feel slighted if his invention, however excellent and beautiful, is not mentioned here.

The leading exhibitor, in the scientific line, is the Stevens' Institute of Technology at Hoboken. It exhibits an extraordinarily powerful Ruhmkorf coil, which throws a spark two feet long through the air. It is said to possess sufficient power to kill a man instantaneously, and when the Geisser tubes are attached to this apparatus, the beautiful colors produced will doubtless attract a great deal of attention.

The department for household articles seems very full of excellent goods and convenient appliances, and the chairs look very easy, soft, and inviting.

Among the machinery there is the usual variety of steam-engines and, also, a Rider caloric engine, which has been previously described and illustrated in our journal.

A small flour-mill, the sides of which are constructed of glass, is exhibited by HECKER BROTHERS, and attracts, also, considerable attention. It is said to have been especially built for exhibition at the fair, and to have cost twelve thousand dollars. The whole operation, from the time that the grains of wheat enter the mill till the fine flour comes out, is open to the view. As it comes from the mill the flour is either put up in small parcels and distributed among the visitors, or made into bread and baked in little loaves, which are likewise given away.

We may also mention a very old steam-engine, which was built, it is said, by BOULTON & WATT, in England, and brought out to this country by the father of the late EDWIN A. STEVENS. Mr. STEVENS was one of the earliest workers in the cause of steam navigation in this country, and his old engine is an interesting relic of those early days.

A fine collection of minerals, and models of gold-

nuggets, is exhibited by the Columbia College School of Mines.

The fair may now be said to be well under way, and calculated to repay the trouble and expense of a visit.

MINING SUMMARY.

California.

GRASS VALLEY MINES.

We clip the following items from the Grass Valley *Union* of September 6: The mines of Grass Valley seem generally to be doing well. Yesterday morning the Enterprise Gravel Mining Company, working on Buena Vista Hill, struck into gravel, the thickness of which is seven feet. The gravel is closely cemented, and is rich in gold. We saw several specimens of cement which were studded with lumps of heavy washed gold. The Enterprise Company will have to put up crushing works. The Coe mine is looking very well. The ledge in the bottom of the shaft is about six feet thick, and is heavily charged with mineral, showing also free gold. The ledge is nearly vertical. The Empire mine is also doing well, sending to the surface very rich rock. The North Star is in a dividend-paying way, having openings which guarantee that the dividends will continue for many months to come. New York Hill shows good rock in some of the old levels, and is being continually worked for greater and better developments. The managers have the greatest confidence in the success of this mine. The Kentucky ledge, east of town on the Wolf creek has been recently sold to parties in San Francisco for the sum of $25,000. The appearance of the Kentucky ledge indicates that the purchasers have made a great bargain. The Webster gravel mine on Randolph hill, is paying over expenses, and the quality of gravel is increasing every day. We hope to hear of something good from the Webster mine. The Altona on Alta hill, has good prospects in the gravel.

ELDORADO COUNTY—THE GREAT CREVICE MINE.

The Sacramento *Reporter* says: On Sunday last, J. H. SULLIVAN, Justice HARRY LEWIS and V. AYERS, of the Great Crevice Mining Company, visited the works of the company, located on Murderer's Bar on the Middle Fork of the American river, in Eldorada county. They found the work progressing finely, the men having already gone down some sixteen feet. They are now making a tube of iron, which measures five feet clear on the inside, and expect to have it down ninety feet in about sixteen days, when they will probably strike pay dirt. This crevice was once celebrated for its rich mining, but the bottom of the crevice was never found. The present company have gone to work systematically with powerful machinery, and they are confident that they will find the bottom of the crevice rich in the precious metals.

CALAVERAS COUNTY.

The Calaveras *Chronicle*, September 2d, says: An ounce of quartz, taken from the Polomo mine, yielded $2. This is at the rate of over $6,000 per ton. The mill leased by the proprietors of the old Foot & Thompson quartz mine, near Rich Gulch Flat, is in operation, crushing rock taken from the lead. Work has been resumed upon the Petticoat mine, at Railroad Flat. Parties in Virginia City have furnished means to sink the main shaft 30) feet deeper, which will thoroughly prospect the lead. A recent clean-up at the Whiskey Slide mine netted 106 ozs. of retorted gold, the product of 125 tons of rock. BATES & Co., whose claim is located about a mile from town, in Chili Gulch, have recently struck the lead and found it rich beyond all comparison. They took 4½ lbs. of gold in as many days, the product of four men's labor.

PLACER COUNTY.

Auburn *Herald*, September 20th: The Junction Divide M. C. have opened a quartz ledge five feet thick, on a bench on the west branch of the North Fork of the American river, and about 300 feet above the bed of the stream. The quartz looks well, and it has every indication of being a rich mine.

PLUMAS COUNTY.

Quincy *National*, September 2d: The Eureka mine, since the mills were started the present summer, has yielded the sum of $105,000.

SOLANO COUNTY—THE QUICKSILVER MINES.

Valejo *Chronicle*, September 2d: It is expected that the smelting works will be completed next week, and the smelting of ore at once commenced.

TULARE COUNTY.

Visalia *Delta*, August 31st: The old Spangler Ditch, running out of Kings river, has been purchased by the people of the Lone Tree settlement, for the sum of $3,000 in paid-up stocks, and a company with a capital stock of $10,000 are about to enlarge the ditch to a width of twenty-two feet.

TUOLUMNE COUNTY.

Sonora *Democrat*, September 2d: Work is being pursued, day and night, on the Kincaid Flat Tunnel, by a force of six men, who have made from nine to ten feet each week for some time past. This company have made an open cut of 250 feet, driving their tunnel through solid rock 1,300 feet, at an expense of about $60,000. They have 420 feet more to run to reach the sink of Kincaid Flat, which will require another year.

Colorado.

The *Miner*, of September 14, has the following budget of

MINING ITEMS.

R. L. MARTIN is working the Elkhorn lode, Sherman mountain. Work on the Maine lode progresses actively. It is a good mine. A fine vein of ore is being worked in the west end of the Caledonia. The Matilda Fletcher mine is yielding quite prolifically; our young friend, HENRY ADAMS, has got a good thing. The snow of last week will probably cause a suspension of work in some of the gulches in Summit county. Ore from the Baker mine has been recently treated by Palmer & Nichols, with good results. We learn that the mine is yielding ore in quantity. In all probability the Swansea Smelting works, at the forks of the creek, will soon be put in active operation. We trust such is the case. The Stevens mine, at Argentine, continues to turn out ore in quantity, and of a good quality. Several tons are now crushed and sacked, ready for shipment. An assay of some decomposed material from the Moose lode, near Montgomery, Park county, was made here last week, that gave a result of over 500 ounces to the ton. A lot of ore from the Edgar mine, Spanish Bar District, has been brought to PALMER & NICHOLS' mill for treatment. It is one of the best and most productive mills in the country. Prof. DIBBIN having completed the repairs on the International mill, and added some new machinery, has again started up, with the intention of running through the winter, if possible. But little mining is being done at Empire this season, notwithstanding the fact that some of the best gold mines in the Territory are to be found there. The great trouble is want of facilities for treating the ore. The shaft on the Cashier mine, Sherman mountain, which has been passing through barren ground for several feet, penetrated a body of ore on Friday last. It is a good mine, one of the best here, and is being worked with vigor. The east drift on the Mammoth lode is now in some eighty feet, with from eight to twelve inches of solid ore in the breast. A stope is being driven above the drift, and the product from both is about three and a half tons per week.

Work on the Griffith mine has been resumed, under the charge of J. G. Mahany, Esq. Look out for an immense product of ore from this noble vein.

THERE is great activity in mining matters on both Sherman and Republican mountain. Both new and old discoveries are being actively developed.

THE International mill East Argentine, shipped yesterday a bar of Silver weighing 1170 ounces, coin value $1254, the product of Belmont ore. Mr. Skeahan informs us that he will place the brick on exhibition at the fair.

THE Burleigh tunnel is being pushed into the heart of Sherman mountain with rapidity, and will undoubtedly soon penetrate another true fissure vein. We still hold to the opinion that these tunnels will eventually prove the best mining investment in the Territory.

WE learn that a large amount of first class ore is accumulating at the Terrible mine, which will not be crushed and shipped until they have their machinery erected. A large lot, some four or five hundred tons, of second class ore, is being delivered at the Stewart mill for treatment.

ON the Comet lode Messrs. SMITH & GRAVES are running a drift across the vein at a point about thirty feet in depth in the west shaft, and on Friday last had reached a distance of fifteen feet, without reaching the foot wall. The entire length is in good milling ore. This mine needs strong active development, when it will become the largest ore producer in the Territory.

THE Lebanon Mining Company are pushing their tunnel with vigor, and will undoubtedly soon reach a true fissure vein. They are also actively working the Hise and Guthrie, from both of which they are procuring a good grade of ore. Their concentrating works are being run, and the machines appear to be doing good work. This company is in a fair way of reaping a rich reward through their investment.

THE Crystal lode at Idaho is undoubtedly one of the best mines in the country, as recent working results indicate. The ore carries both gold and silver in quantity, and with proper customs mills at Idaho could be made very profitable. As it is, paying the heavy expense of transportation to the mills here, a profit of over 50 per cent has been realized, as the following figures furnished us by Z. KALBAUGH, will show:

Sold to the Stewart Silver Reducing Co.,
7,165 pounds.....$604.87
Total expenses of mining and transportation.....236.65

Total profit.....$368.22

THE *Register* says, Dr. PAUL, of this city, has just returned from a two week's prospecting tour in the Montgomery mining districts, Park county. We are greatly interested in the accounts he gives of the singular deposits of silver ore on Mt. Lincoln. There appears to be numerous irregular deposits, beds, or silver placers, rather than lodes, (some having the character of gash veins,) in the lime-stone formation. Some of this ore is of a high grade, yielding from 500 to 1,000 ounces of silver per ton, and a few of the larger deposits are being worked; from one, a hundred tons or more have been raised.

THE Marshal tunnel is still being pushed forward energetically, and is fast approaching the celebrated O. K. lode, which it will cut over 550 feet below the surface. Great results are confidently expected when the tunnel reaches this mine.

PALMER & NICHOLS have shipped, since our last report three bars of silver bullion, of the following weight and value: Bar 395, 1535,40 ounces, 876 fine, coin value, 1740, 13; bar 396, 1533,15 ounces, 819 fine, coin value $1623,45; bar 397, 775 ounces, 812 fine, coin value $813,99. Total $4177,57.

A valuable discovery has recently been made on the Republican mountain, which promises to prove a "big thing." It is called the "Fannie Holmes," and is owned by Harris, Marshall & Co. The ore runs $380 coin per ton. As the ore vein is developed it is increasing in size and value.

The Stewart Silver Reducing Company have shipped, since our last report, silver bullion of the value of $4,071 35. Several lots of ore have been purchased from the Alhambra, Eagle Bird, Muscatine, Equator dump and Elkhorn, containing from 96 to 234 ounces in silver to the ton. Also, three tons from the Prince Albert, containing 284 ounces, $367 21 coin per ton. Twelve tons from the Hiawatha, 220 ounces, $284 40 per ton. Several lots of slide ore, from 545 to 1120 per ton. The last lot was paid for at the rate of $1,258 per ton, or 62½ cents per pound. The Marshall Silver Mining Company have struck, in the drift on lode No. 5, intersected by the tunnel, five feet in width of good milling ore, running above 200 ozs. to the ton. This lode is, as indicated above, the fifth discovery by the Marshall tunnel, and was cut about twelve months since. It is full twenty-one feet between walls, and where the tunnel passes through it was lean. The Robinson tunnel, which has struck it near the surface, is owned by the Marshall Mining Company, and is leased from the Company by ROBINSON & Co. They are also in pay ore. It is the opinion of well-informed miners that a large portion of what is known as slide ore has been broken off of this vein. It is evidently a true fissure, and one of the most valuable silver ledges in this country.

SUMMIT COUNTY ITEMS.

The sams paper has also the following: The first snow of the season fell on the 9th of September. The mountains around the head of the Blue are white with snow.

Mining mattess all over the country are being shut down.

A good clean up was made a few days since on PARKER H. PIERCE'S ground, Stilson's Patch.

Extensive preparations are being made for next season's work all over the country and if water is plenty the yield of gold will be enormous.

Greenleaf & Co,. are going ahead with their large ditch to take the water to the head of Humbug gulch. This ditch commands a large amount of ground, probably sufficient for profitable mining for the next century. It passes through localities where there is good pay, but no water.

Montana.

VIPOND DISTRICT.

From the Deer Lodge City *Independent* of September 9: Mr. W. C. BLAKE returned from this noted district in Beaverhead county a few days since. He is very favorably impressed with the prospects of the district. There are a great many persons in that vicinity at present "ledge hunting." UNCLE BILLY SPURR discovered a very rich ledge last week and has found good indications of an

other. Mr. HUGH T. PATTON recently sold S. H. BOHM fifty tons of ore that will be hauled to Argenta for reduction. Several other sales of ore are in contemplation. The VIPOND Brothers are taking out rock, which is said to be very rich. There are, Mr. BLAKE says, hundreds of tons of very rich silver rock lying loose on t he ground, some of which is being collected. There is already rock enough mined to keep several furnaces running during the winter, and there will be several thousand tons raised the coming winter. The owners of some of the mines contemplate erecting furnaces next season, and there is no doubt that from the first they will pay enormously. If these mines were in Arizona or Peace River thousands would rush to them, but as they are in Montana they are scarcely noticed. We have no doubt that within one year these mines will be classed among the richest in America. Among the fortunate owners of ledges in that district are H. D. MANSFIELD, FRANK BECK, HUGH T. PATTON, WILLIAM SPURR, DAN. PARKER and the VIPOND Brothers, and the mines could not have fallen into the hands of a more energetic party of miners.

HENDERSON GULCH.

From Mr. DAVE HENNESSEY, of Henderson, we learn that HENNESSEY & MURRAY cleaned up $1,600 from three weeks' run, with water only four hours a day. JEFF. MCDERMOTT and C. F. MCANDREWS have purchased MURRAY'S interest and one-third of HENNESSEY'S interest, paying 5,000 for it. WALWORK, TERRILL & Co., on the bar below, are making on an average $12 per day, having water all day. O'CONNERS & MASTISON are making from $15 to $20 per day to the hand. THOMAS SMITH & Co. are doing as well. FERGUSON & Co. are making from $12 do $15 to the hand. All others are doing comparatively well. Chinamen are buying ground whenever they get an opportunity. O'CONNERS & MASTISON had their flume robbed (supposed) by Chinamen, of some $300, about two weeks ago. The thieves have not been discovered. HENDERSON, though one of the oldest camps, still holds its own.

Nevada.

EUREKA DISTRICT.

From the Eureka *Sentinel* of September 8.

ANOTHER IMPORTANT SALE.

The Wide West mine, so favorably known for its large mass of high grade ore, changed owners yesterday for $25,000, cash, and an offer of $80,000 for the General Lee Company's property was refused by the owners, who are all Eurekeans except ROBERT BARTON of San Francisco, who is large owner in both properties.

MORE FURNACES REQUIRED.

We have said a great deal in favor of the introduction of mills into this district; but the want of furnaces, especially for custom work, is equally apparent. All the furnaces now in operation or about to be built, are required for the reduction of ores from mines belonging to furnace owners. Our prospectors have a large amount of ore for sale.

From the Gold Hill *News* of September 12.

CALEDONIA MINE.

Of late there has been considerable activity in the stock of this mining company, says the *Enterprize*, owing, doubtless, to the finding of valuable deposits of ore on the 400-foot level, and to the promising appearance generally of the several working levels. The mine is the furthest south on the Comstock, and embraces within itself and is surrounded by a great amount of new and unexplored ground; indeed, save what openings have been made between the surface and the 400-foot level, all in and around the mine is new. They have just connected their main shaft with a winze 300 feet to the northward by means of a drift, and now have an excellent circulation of air throughout the mine. The winze with which this connection has been completed starts on the 300-foot level. On the 400-foot level, about twenty feet north of the winze, they have found an excellent body of ore, the extent of which is not yet known, and on the same level at a point a short distance north of the shaft, they have cut into another good body of ore which promises to prove extensive. The ore breasts on both the 200 and 300-foot levels are looking well and are yielding as usual. Two mills are now running on ore from the mine—the Sapphire and the Gold-Hill Quartz. As the mines to the northward—the Crown Point and Belcher, in particular—have found their best bodies of ore at the depth of 1,000 feet, the Caledonians have before them a promising future, as between that depth and their present lowest level they have no less than 700 feet of virgin ground.

SAVAGE MINE.

More ore is being extracted from this mine than can be milled, at the present time, therefore it accumulates in the dumps. Hoisting through the new incline, below the tenth level, will commence about the first of next month.

CROWN POINT MINE.

The ore breasts at the lower levels continue looking and yielding well, especially at the 900-foot level. Winzes for air connections are being made between the three lowest levels. The regular monthly dividend disbursed by the Crown Point Mining Company on last Saturday amounted to $120,000, and that of the Chollar-Potosi to $28,000. The August receipts of the Hale & Norcross Mining Company amounted to $46,500.

From the Reese River *Reveille* of September 9.

MONITOR MINE, BELMONT.

There is now being worked at the Manhattan Mill, seventy-five tons of ore from the above-named mine, the result of which, when completed, we will give to our readers. From the certificates we have seen of assays of pulp from samples already taken, we are confident that the average per ton will be expressed in figures somewhat extraordinary even for ore from the argentiferous ledges of Silver Bend.

There has been since the first of last March about 200 tons of ore taken from the mine, and of a high grade. The tunnel from which it was taken, taps the ledge at a depth of about 275 feet, at which depth it was well defined, and varies in width from two to sixteen feet. The mine is owned by Messrs. Stein, Flagla, Roberts and Carroll.

METACOM MILL.

This mill, situated about six miles of Austin, is being thoroughly overhauled and repaired, and will probably be ready to commence work in about a month from this time. The old furnaces have been torn down and a White's revolving furnace will be substituted. This is similar to, but an improvement upon, the furnace at the Citizens' mill.

The Pacific Company will run the mill upon ore from the Lane and Fuller shaft, and we understand it is not their intention to do any custom work.

THE COMSTOCK LODE.

The three known chimney-openings of this lode, says Mr. HAGUE in report of the exploration of the Fortieth Parallel are styled the "Gold Hill," the "Virginia" and the "Ophir." Explorations on these chimneys have been carried on to a depth of over 1,200 feet, resulting in the immense aggregate yield of 100,000,000, during the brief period of nine years, or at the rate of $11,000,000 per annum. The aggregate yield of the "Ophir" group is estimated at $7,500,000; the "Virginia," $18,000,000, and the "Gold Hill" at about $42,000,000. These figures have been taken from the official returns of the various mining companies, but do not cover the considerable sums which must have leaked out in the form of mill cleanings and battery scrapings, and which would swell the total product to several millions more. Great as the yield has been, the vein contains an enormous quantity of non-productive rock. According to the Atlas plates accompanying the report, not more than twenty-five per cent. of the actual face of the lode has been occupied by argentiferous bodies, and of that it is estimated that not more than one five-hundredths of the vein material has been charged with a workable per centage of silver.

Forty-six claims, varying from ten to two thousand feet in length, were originally located on the Comstock lode in '59 and '60. Since that time many of the smaller ones have been consolidated. Extensive operations have been conducted on them all, in most instances realizing large profits to the adventurers. Many of them have earned a world-wide reputation, and hold prominent positions on the stock exchanges of Europe and America. The most important ones are the Gould and Curry, Savage, Hale and Norcross, Chollar-Potosi, Crown Point, Empire, Belcher and Overman. Shafts have been sunk to the depth of 1,300 feet, at an average cost of about 180 dollars per foot. In the bonanzas, or ore-bearing portions of the ledge, the ore is very finely, almost imperceptibly distributed through the mass, and with a general uniformity. The character of the quartz forming these ore bodies, is usually soft, granular and sometimes friable, and can generally be worked without the aid of powder, although blasting has to be resorted to occasionally.

Indiana.

The U. S. *Railroad and Mining Journal* has the following on the

OIL WELL AT TERRE HAUTE.

The following is the record of the boring of the White Sulphur Artesian Well at Terre Haute, in Indiana, given us by Mr. O. N. Adams. There are three wells at Terre Haute, respectively 1,925, 1,635 and 1,785 feet deep. The second one mentioned was stopped before reaching sulphur water. The first and second are 4¼ inch holes. The one recorded below has a drive pipe, 6 inches inside, to rock, 130 feet down. Ash poles 2 inch diameter and 15 to 18 feet long were used (37 feet long in the 1,635 feet well). Well tubed to the bottom; cased with 3¼ inch casing to 600 feet; seed bag on the casing; works well; had difficulty in the 1,925 well because not cased; engine about 18 horse power; wooden sucker rods 18 feet long. The 1,635 feet well is pumped; the other two flow slowly.

Record: at 840 feet a show of oil; at 1,276, *nine inch vein, lubricating oil;* at 1,335, vein of fresh water; at 1,629, 10 *inch vein of oil;* at 1,658 blue sulphur water; at 1,710, white sulphur water; at 1,768, white sulphur water; at 1,785, large flow of white sulphur water, rising at the rate of about 6,000 gallons per hour. Sand and gravel were passed through for the first 150 feet; fire clay, 1½; brown slate, 2; soapstone, 11; *coal*, 4—(168½ feet). Fire clay, 3½; limestone, 2 2 feet 1 inch; fire clay, 3 feet 2 inches; brown limestone, 2; soapstone, 1½; *coal*, 6—181¼ feet. Fire clay, 3 feet 2 inches; (salt water); blue limestone, 2½; hard pan, 8½; soap stone, 10 feet 5 inches; *coal*, 2—207¾ feet. Fire clay, 3; sandstone, 1; blue limestone, 2 feet 4 inches; dark blue rock, 2¼; white sandstone, 3; fire clay, 5; shale, 2 feet 4 inches; soapstone, 2; blue limestone, 5 feet 2 inches; soapstone, 5; *black shale*, 4; blue sandstone, 6; *black shale*, 2—251 feet. Fire clay, 5; gray sandstone, 10; *coal*, 0 feet 9 inches—267 feet. Fire clay, 2 feet 5 inches; blue rock, 3 feet 4 inches; *black shale*, 3—276 feet. Fire clay, 2 feet three inches; limestone, 4; fire clay, 5 feet 10 inches; limestone, 3 feet 6 inches; *coal*, 2½—293¾ feet. Fire clay, 1; sandstone, 28 feet 3 inches; fire clay 7 feet 2 inches; blue sandstone, 27; slate, 9; blue sandstone, 29 feet 1 inch; white sandstone, 8; slate, 36 feet 2½ inches; sandstone, 1 foot 7½ inches; blue slate, 15 feet 9 inches; white slate, 10 feet 2 inches; (salt water) white sandstone 35 feet 11½ inches; soapstone, 43; blue slate, 28 feet 7½ inches; white slate, 7 feet 7 inches; hard sandstone, 23 feet 9 inches; hard black stone, 9 feet 6 inches; white slate, 12; (salt water and gas); hard sand rock, 127 feet ¼ inch—746½ feet. Limestone white, 4 feet 4 inches; fire clay, 3 feet 3 inches: white limestone, 30; hard gray sandstone, 10; blue limestone, feet 11 inches—801¼ feet. Sandstone hard white 0 feet 9 inches; hard blue sandstone, 3 feet 6 inches; blue clay, 3; hard gray sandstone, 2 feet 3½ inches; hard blue limestone, 3 feet 3 inches; hard sandstone, 110 feet 5 inches; soft sandstone, 7 feet 3 inches; blue slate, 5; blue hard sandstone, 411 feet 2 inches; blue soapstone, 34 feet 10 inches; white grit sandstone, 117 feet 2 inches; hard blue slate, 48; brown sandstone, 89 feet 11 inches; white coarse sandstone, 10 feet 9 inches; dark sandstone, 6 feet 9 inches; yellow sandstone, 44 feet 2 inches; hard flint, 15 feet 8 inches; clay, limestone or shale, 70 feet 2 inches—1,785 feet.

The importance of this record cannot be overestimated; for it affords a conclusive demonstration of the nonsense of the "Angell oil belt" and all other such local determinations. A glance at the above paragraph shows that for about 300 feet the well passes through coal measures, and enters the sandstones of the Conglomerate No. XII; a reservoir of brine springs, just as everywhere else in Pennsylvania, West Virginia, East Kentucky and Tennessee. At about 750 feet it strikes the white subcarboniferous limestones of XI, with sandy layers between them, the whole formation about 50 feet thick. It then descends 475 feet further through Devonian rocks of X, IX, and VIII, and strikes oil at 980 feet below the lowest coal bed, just about where it would in Venango county, Pennsylvania. The first flow of oil corresponds then to that of our *first sand rock horizon* in Pennsylvania. At 353 feet further down, it struck the second flow, corresponding to the *third sand rock horizon* in Pennsylvania. Nothing could exhibit more plainly the horizontality of the petroleum in the measures, and the absurdity of supposing it arranged in vertical belts.

This well must have been stopped at no great distance above the black slates of VIII, charged with sulphuret of iron, and the probable source of the sulphur water.

Idaho.

From the Idaho *World* of September 7:

BOISE COUNTY QUARTZ.

Mr. JOHN MUIRHEAD, of Pioneer City, called on us a few days ago, and from him we learned that the owners of the Golden Era ledge are actively engaged in developing their mine. A large amount of rich ore is being taken out, and gold can be seen with the naked eye in all the quartz on the dump. The rock is pronounced by all who have seen it as the richest ever taken out in this

county, if not in the Territory. Work has been commenced on the western extension by the owners of that portion of the mine, and the tunnel which has been commenced will, in a short time, reach the ledge. Since the close of the placer mining season many of the miners have turned their attention to quartz, and the mountains are being thoroughly prospected in every direction. We learned, yesterday, of the discovery of another ledge which is said to be within three-quarters of a mile of town; and it is rumored that it is a very rich and very well-defined ledge. We saw a piece of the quartz, weighing probably over a hundred pounds, at Lodge's gunsmith shop, and on examination we could see gold in several places in the rock. The ledge has not yet been recorded, and no name has been given it, so far as we could learn. Another ledge was discovered several days ago by Mr. KEEGAN and others, some six or eight miles from town, in the direction of Middle Boise, but we have been unable to learn anything definite concerning it. From the number of parties who are prospecting for quartz, we have no doubt but that we will be called on to chronicle numerous discoveries in that line for weeks to com

CENTERVILLE AND VICINITY.

From L. O. BENEDICT, Esq., of Centerville, we learn that the work of raising the grade and extending the ditch belonging to Messrs. CHANNELL, THATCHER & Co. has been commeced. Hands are now engaged in getting out a large amount of heavy timbers, to be used in the construction of several large flumes, which are found to be necessary in order to take the water higher on the mountain sides, and when completed a vast extent of mining ground, which has lain idle for want of water, will be covered by the line of the ditch. We learn that it is the intention of the company to extend the ditch several miles further down the creek, which will also be the means of furnishing water to a large number of miners who own valuable grounds on the east side of Grimes' creek, below Boston and Siskiyou gulch. Times are rather dull in Centerville and Boston—but little mining being carried on.

GRANITE DISTRICT.

From Mr. FERRY DOLING, who called on us lately, we learn that the excitement about quartz in the neighborhood of Granite Creek is at fever heat. Mr. THOMAS S. HART's new quartz mill commenced work recently, crushing ore from the Lawyer ledge, and we understand that a sufficient amount of quartz is now on hand to run the mill ten or twenty months at least. Some twenty or twenty-five men are at present engaged in the mine and mill, and the ore gives every indication of being of the first quality. The mercury tables appear well coated with amalgam, and a clean-up will be made next Tuesday or Wednesday which will astonish the natives. The mill is situated about one-third of a mile down the gulch from the ledge, and it is expected that the supply of water will be sufficient to keep it in operation during the ensuing winter. We understand that Messrs. FRARY and GOLDSBERRY, who own the mine, have made arrangements with Mr. HART to supply this mill with quartz as long as it keeps running. Mr. DOLING informs us that a new ledge, called the Home Ticket, was discovered a few days ago by Messrs. DANIEL MCCARTY & Co., which is located on the ridge of divide between the west fork of Granite Creek and Hazard Gulch, and only two or three hundred yards from Mr. HART's mill. A hole has been sunk on the ledge some twenty odd feet and a four-feet ledge developed. The crevice dirt prospects well, and the discoverers have every confidence in the richness of their new mine. Numerous parties are out prospecting for quartz in every direction around Granite Creek, and new discoveries will doubtless be made in many places. In the placer mining business around Granite, affairs are, of course, becoming dull. About fifteen men are still engaged in mining in Illinois Gulch, a short distance from HART's mill, while quite a number of parties are yet at work in and around Granite Creek. KINNEY, MORIARTY, SHERIDAN, LARKIN & LANGERIE are still at work in the creek; while BROGAN & Co., DEVINE & Co., and several other parties are running claims on the bars near the creek. Several other companies are at work whose names were not given us, but the placer mining business in and around Granite may almost be considered over for this season. Owners of gulch and hill claims at any distance from the creek are now principally engaged in "cleaning up," sufficient water being obtainable for that purpose; and after getting through with that branch of the season's mining, we have no doubt but the mountains in that section will be thoroughly prospected for quartz by the boys, who will have nothing particular to do. We hope they may each discover a ledge better than the old Comstock.

NEW PLACERS.

We understand that Judge HEATH of Rocky Bar, who has been for some time prospecting for placer diggings on the Payette, in company with Mr. BARTEE, more familiarly known as "Red," was in town yesterday, *en route* for Alturas, and reported that they had found diggings on the Payette that would pay from twenty to thirty dollars per day to the man. The exact locality is unknown to any except the parties mentioned, but if they have found such diggings they will not be able to keep them covered up long.

94TH AUCTION SALE.

130,000

TONS SCRANTON COAL,

ON WEDNESDAY, SEPTEMBER 27th, 1871.

NEW YORK, Sept. 20, 1871.

The DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY will sell, by Messrs. JOHN H. DRAPER & Co., Auctioneers, at the Company's Sales Room, 26 Exchange Place, corner of William street, New York, on Wednesday, Sept. 27, at 12 o'clock, noon,

130,000 TONS

of COAL, from the Lackawanna regions, of the usual sizes, deliverable at their Depot, Elizabethport, N. J., during the month of October, 1871.

The sale will be positive; each lot put up will be sold to the highest bidder; no bids, in any form whatever, being made for account of or on behalf of the Company. The conditions will be fully made known at the time of sale.

TERMS: Fifty cents per ton, payable in current funds, on the day of sale, and the balance, within ten days thereafter, if required, at the office of the Company.

SAMUEL SLOAN, President.

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Steam Pumping Engines, Single and Duplex, Worthington's Patent, for all purposes, such as Water Works Engines, Condensing or Non-condensing; Air and Circulating Pumps, for Marine Engines; Blowing Engines; Vacuum Pumps, Stationary and Portable Steam Fire Engines; Boiler Feed Pumps, Wrecking Pumps,

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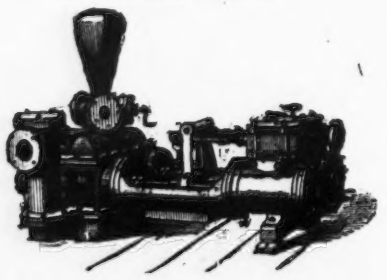

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Send for Circular.

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TIN-LINED LEAD PIPE is a Block-Tin Pipe heavily coated with solid lead. The metals are so thoroughly united in the process of manufacture as to be, in fact, but one pipe. Tin is a metal closely resembling silver, both in color and purity; hence water flows through tin-lined lead pipe as pure as if drawn through silver. It is as flexible and as easily worked as lead pipe; it is also stronger and more durable.

In addition to the plumbing of houses, it is largely used in conveying water from springs and wells; also for Beer Pumps Water Coolers and Mineral Waters. By its use lead and zinc poison and iron rust are all avoided, and general health promoted. Price fifteen cents a pound for all sizes. Circulars and sample of pipe sent by mail free. Address

COLWELLS, SHAW & WILLARD M'f'g. Co.,
No. 213 Centre St., New York.

Also, manufacturers of Block-Tin Pipe, Sheet Lead, Lead Pipe, Solder, &c. Orders solicited.
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Machine and Iron Company,

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Manufacturers of STEAM ENGINES, BOILERS, and all kinds of machinery. Special attention given to MINING MACHINERY, REPAIR WORK and PERFECTING NEW MACHINERY. IRON and BRASS CASTINGS, at low prices. PORTABLE and other HOISTING ENGINES and MACHINERY. au22-3mos

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Wilkesbarre and Lehigh Coal,

FOR STEAM AND FAMILY USE.

OFFICE:

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jan1-1y JNO. WHITE, LINDLEY H. FOWLER, LOUIS T. SNOW.

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Mines at Newburgh, Preston Co., W. Va.
Company's Office, No. 52 S. Gay St. Baltimore, Md.
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This Company offer their very superior Gas Coal at lowest market prices.
It yields 10,996 cubic feet of gas to the ton of 2,240 lbs. of good illuminating power, and of remarkable purity; one bushel of lime purifying 6,792 cubic feet, with a large amount of coke of good quality.
It has been for many years very extensively used by various Gas Companies in the United States, and we beg to refer to the Manhattan, Metropolitan, and New York Gas Light Companies of New York, the Brooklyn and Citizens' Gas Light Companies of Brooklyn, N. Y., the Baltimore Gas Light Company of Baltimore, Md., and Providence Gas Light Company, Providence, R. I.
The best dry coals shipped, and the promptest attention given to orders. sep21-1y

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THE DESPARD COAL COMPANY OFFER THEIR Superior DESPARD COAL to Gas Light Companies throughout the country.

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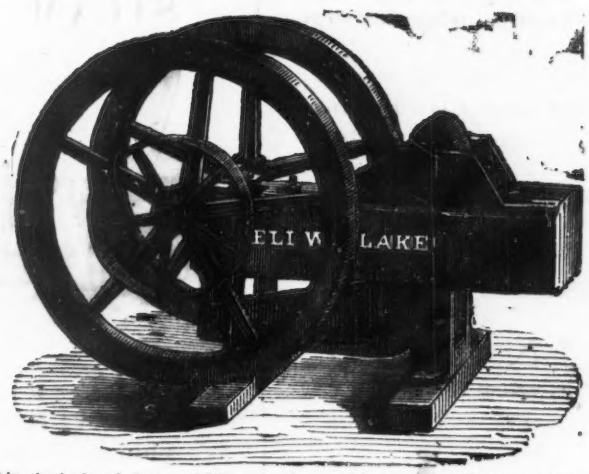

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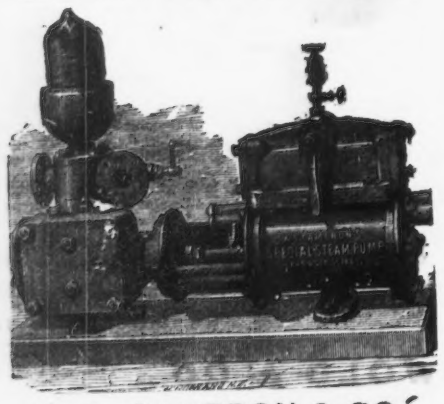

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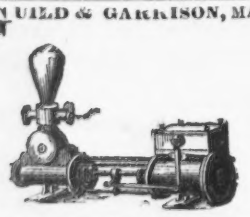

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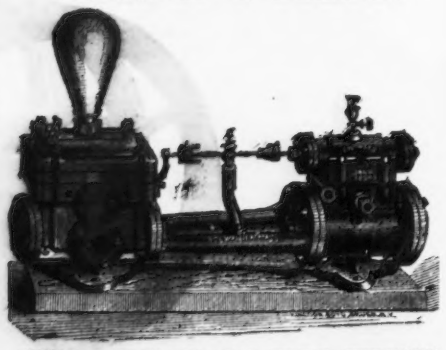

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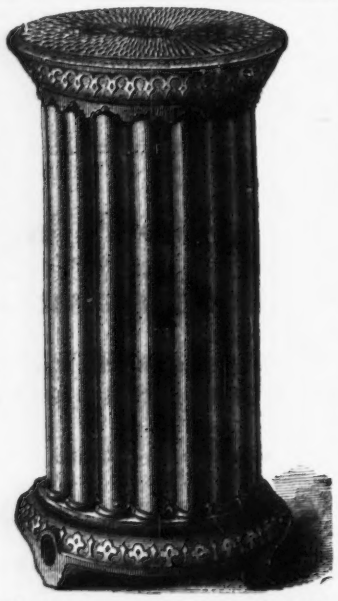

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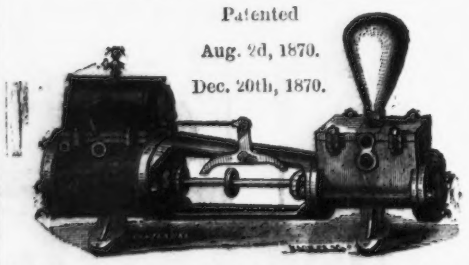

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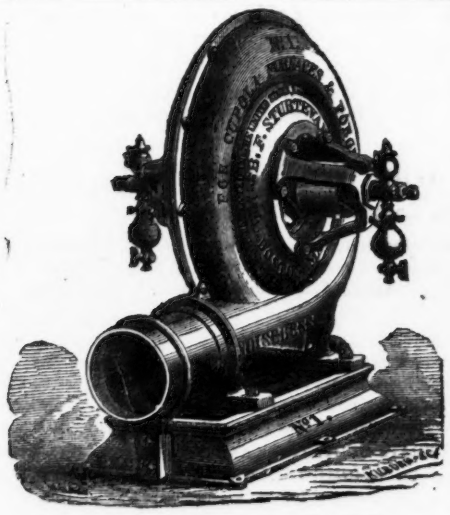

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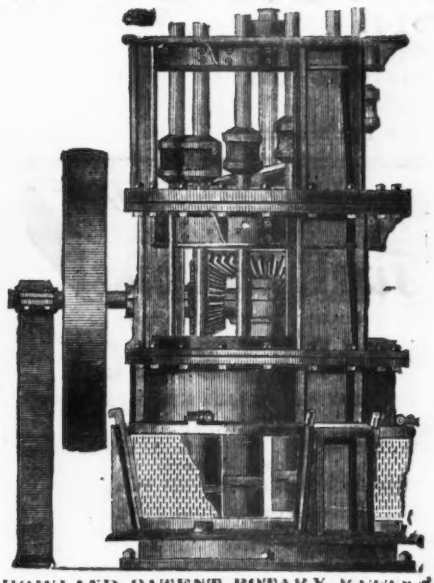

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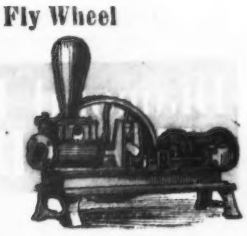

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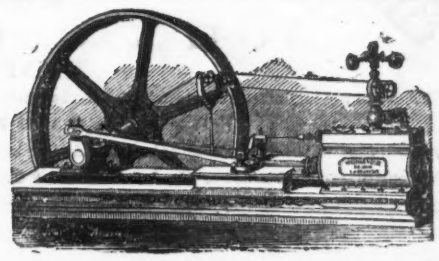

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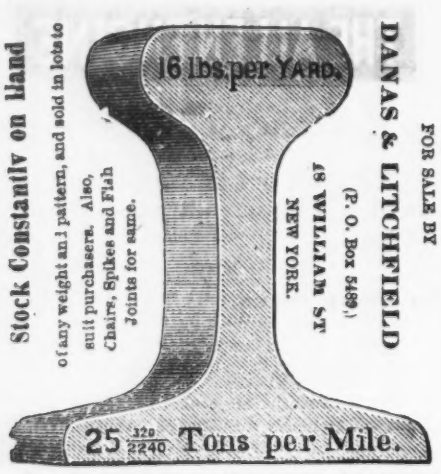
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